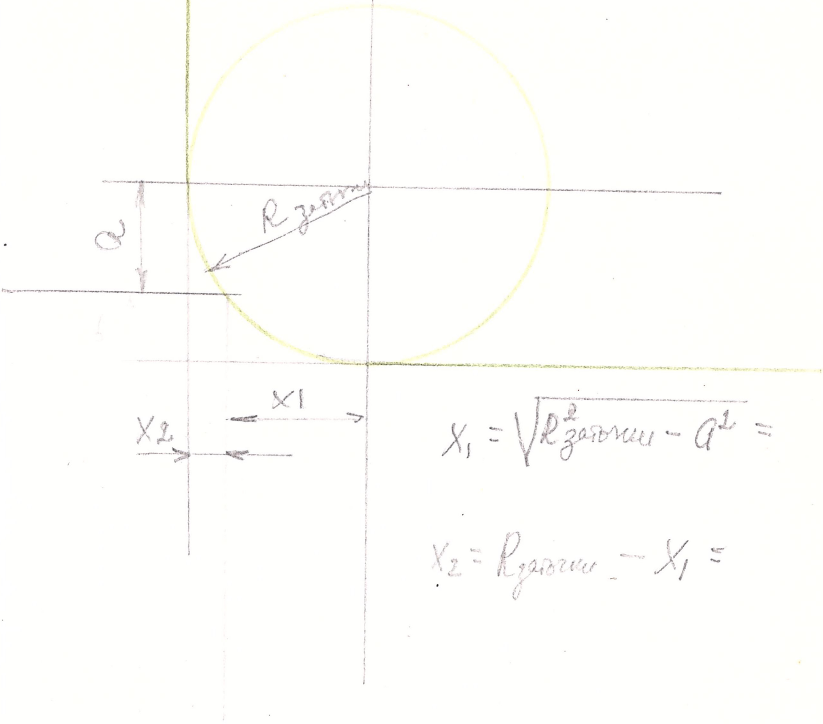
Н. И. ЦВЕЛОДУБ

ТАБЛИЦЫ ПЕРЕВОДА УГЛОВЫХ РАЗМЕРОВ В ЛИНЕЙНЫЕ

Павленко 1977г.


a
R заточки
X1
X2

$X_1 = \sqrt{R^2_{заточки} - a^2} =$

$X_2 = R_{заточки} - X_1 =$

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Таблицы перевода угловых размеров в линейные. Изд. 3-е. Цвелодуб Н. И. Киев, «Техніка», 1978. 96 с.

В справочнике приведены прямоугольные координаты точек на окружности для радиусов от 10 до 99 и для центральных углов от 0°30′ до 89°30′. Предназначен для расточников, шлифовщиков, фрезеровщиков, разметчиков, а также может быть полезен конструкторам, технологам и мастерам ОТК.
Ил. 1.

Рецензент *Г. Г. Кантер*

Редакция литературы по машиностроению и транспорту
Зав. редакцией *М. А. Василенко*

$Ц\frac{31301\text{-}011}{М202(04)\text{-}78}82\text{-}78$

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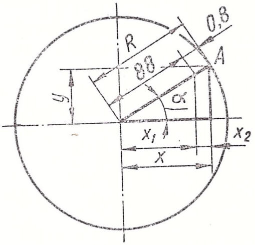
Павленко

ВСТУПЛЕНИЕ

При конструировании технологической оснастки, составлении технологических карт, обработке деталей на координатно-расточных станках и разметке часто возникает потребность в переводе угловых размеров в линейные. При этом приходится перемножать многозначные числа, на что тратится много времени. Таблицы перевода угловых размеров в линейные дают возможность сократить время расчетов в 15—20 раз.



Линейные размеры (координаты), приведенные в таблицах, вычислены с помощью восьмизначных таблиц тригонометрических функций по формулам $x = R\cos\alpha$ и $y = R\sin\alpha$, где x — прилегающий катет, y — противолежащий катет, R — гипотенуза (радиус окружности) и α — центральный угол. Результаты округлены до четырех знаков после запятой.

Таблицы составлены для радиусов от 10 до 99 и для углов от 0° 30′ до 89° 30′ (через 30′). Примеры определения координат для радиусов, меньше 10 и больше 99 или выраженных дробным числом, приведены ниже:

Пример I. Определить координату x точки A (см. рисунок), если радиус окружности равен 88,8 мм или см, м и т. д. и $\alpha = 10°$.

По таблице определяем, что:

для радиуса 88 мм $x_1 = 86{,}6631$ мм;

для радиуса 0,8 мм $x_2 = 0{,}78786$ мм,

где 0,78786 — координата x при радиусе 80 мм, уменьшенная в 100 раз.

$$x = x_1 + x_2 = 86{,}6631 + 0{,}78786 = 87{,}45096 \approx 87{,}451 \text{ мм.}$$

Аналогично определяют и координату y.

Пример II. Определить координату x, если радиус окружности равен 188,8 мм и $\alpha = 10°$.

По таблице определяем, что:

для радиуса 180 мм $x_1 = 177{,}265$ мм (координата x при радиусе 18 мм, увеличенная в 10 раз),

для радиуса 8,8 мм $x_2 = 8{,}66631$ мм (координата x при радиусе 88 мм, уменьшенная в 10 раз).

Прибавив найденные величины, получим искомую координату:

$$x = 177{,}265 + 8{,}66631 = 185{,}93131 \approx 185{,}931 \text{ мм.}$$

ТАБЛИЦЫ

0° 30′

R	x	y	R	x	y	R	x	y
10	9,9996	0,0873	40	39,9985	0,3491	70	69,9973	0,6109
11	10,9996	0,0960	41	40,9984	0,3578	71	70,9973	0,6196
12	11,9995	0,1047	42	41,9984	0,3665	72	71,9973	0,6283
13	12,9995	0,1134	43	42,9984	0,3752	73	72,9972	0,6370
14	13,9995	0,1222	44	43,9983	0,3840	74	73,9972	0,6458
15	14,9994	0,1309	45	44,9983	0,3927	75	74,9971	0,6545
16	15,9994	0,1396	46	45,9982	0,4014	76	75,9971	0,6632
17	16,9994	0,1484	47	46,9982	0,4101	77	76,9971	0,6719
18	17,9993	0,1571	48	47,9982	0,4189	78	77,9970	0,6807
19	18,9993	0,1658	49	48,9981	0,4276	79	78,9970	0,6894
20	19,9992	0,1745	50	49,9981	0,4363	80	79,9970	0,6981
21	20,9992	0,1833	51	50,9981	0,4451	81	80,9969	0,7068
22	21,9992	0,1920	52	51,9980	0,4538	82	81,9969	0,7156
23	22,9991	0,2007	53	52,9980	0,4625	83	82,9968	0,7243
24	23,9991	0,2094	54	53,9979	0,4712	84	83,9968	0,7330
25	24,9990	0,2182	55	54,9979	0,4800	85	84,9968	0,7418
26	25,9990	0,2269	56	55,9979	0,4887	86	85,9967	0,7505
27	26,9990	0,2356	57	56,9978	0,4974	87	86,9967	0,7592
28	27,9989	0,2443	58	57,9978	0,5061	88	87,9966	0,7679
29	28,9989	0,2531	59	58,9978	0,5149	89	88,9966	0,7767
30	29,9989	0,2618	60	59,9977	0,5236	90	89,9966	0,7854
31	30,9988	0,2705	61	60,9977	0,5323	91	90,9965	0,7941
32	31,9988	0,2792	62	61,9976	0,5410	92	91,9965	0,8028
33	32,9987	0,2880	63	62,9976	0,5498	93	92,9965	0,8116
34	33,9987	0,2967	64	63,9976	0,5585	94	93,9964	0,8203
35	34,9987	0,3054	65	64,9975	0,5672	95	94,9964	0,8290
36	35,9986	0,3142	66	65,9975	0,5760	96	95,9963	0,8377
37	36,9986	0,3229	67	66,9974	0,5847	97	96,9963	0,8465
38	37,9986	0,3316	68	67,9974	0,5934	98	97,9963	0,8552
39	38,9985	0,3403	69	68,9974	0,6021	99	98,9962	0,8639
R	y	x	R	y	x	R	y	x

89° 30′

1°

R	x	y	R	x	y	R	x	y
10	9,9985	0,1745	40	39,9939	0,6981	70	69,9893	1,2217
11	10,9983	0,1920	41	40,9938	0,7155	71	70,9892	1,2391
12	11,9982	0,2094	42	41,9936	0,7330	72	71,9890	1,2566
13	12,9980	0,2269	43	42,9935	0,7505	73	72,9889	1,2740
14	13,9979	0,2443	44	43,9933	0,7679	74	73,9887	1,2915
15	14,9977	0,2618	45	44,9931	0,7854	75	74,9886	1,3089
16	15,9976	0,2792	46	45,9930	0,8028	76	75,9884	1,3264
17	16,9974	0,2967	47	46,9928	0,8203	77	76,9883	1,3438
18	17,9973	0,3141	48	47,9927	0,8377	78	77,9881	1,3613
19	18,9971	0,3316	49	48,9925	0,8552	79	78,9880	1,3787
20	19,9970	0,3490	50	49,9924	0,8726	80	79,9878	1,3962
21	20,9968	0,3665	51	50,9922	0,8901	81	80,9877	1,4136
22	21,9966	0,3840	52	51,9921	0,9075	82	81,9875	1,4311
23	22,9965	0,4014	53	52,9919	0,9250	83	82,9874	1,4486
24	23,9963	0,4189	54	53,9918	0,9424	84	83,9872	1,4660
25	24,9962	0,4363	55	54,9916	0,9599	85	84,9871	1,4835
26	25,9960	0,4538	56	55,9915	0,9773	86	85,9869	1,5009
27	26,9959	0,4712	57	56,9913	0,9948	87	86,9867	1,5184
28	27,9957	0,4887	58	57,9912	1,0122	88	87,9866	1,5358
29	28,9956	0,5061	59	58,9910	1,0297	89	88,9864	1,5533
30	29,9954	0,5236	60	59,9909	1,0471	90	89,9863	1,5707
31	30,9953	0,5410	61	60,9907	1,0646	91	90,9861	1,5882
32	31,9951	0,5585	62	61,9906	1,0820	92	91,9860	1,6056
33	32,9950	0,5759	63	62,9904	1,0995	93	92,9858	1,6231
34	33,9948	0,5934	64	63,9903	1,1170	94	93,9857	1,6405
35	34,9947	0,6108	65	64,9901	1,1344	95	94,9855	1,6580
36	35,9945	0,6283	66	65,9899	1,1519	96	95,9854	1,6754
37	36,9944	0,6457	67	66,9898	1,1693	97	96,9852	1,6929
38	37,9942	0,6632	68	67,9896	1,1868	98	97,9851	1,7103
39	38,9941	0,6806	69	68,9895	1,2042	99	98,9849	1,7278
R	y	x	R	y	x	R	y	x

89°

1° 30′

R	x	y	R	x	y	R	x	y
10	9,9966	0,2618	40	39,9863	1,0471	70	69,9760	1,8324
11	10,9962	0,2879	41	40,9860	1,0733	71	70,9757	1,8586
12	11,9959	0,3141	42	41,9856	1,0994	72	71,9753	1,8847
13	12,9955	0,3403	43	42,9853	1,1256	73	72,9750	1,9109
14	13,9952	0,3665	44	43,9849	1,1518	74	73,9746	1,9371
15	14,9949	0,3927	45	44,9846	1,1780	75	74,9743	1,9633
16	15,9945	0,4188	46	45,9842	1,2041	76	75,9740	1,9894
17	16,9942	0,4450	47	46,9839	1,2303	77	76,9736	2,0156
18	17,9938	0,4712	48	47,9836	1,2565	78	77,9733	2,0418
19	18,9935	0,4974	49	48,9832	1,2827	79	78,9729	2,0680
20	19,9931	0,5235	50	49,9829	1,3088	80	79,9726	2,0942
21	20,9928	0,5497	51	50,9825	1,3350	81	80,9722	2,1203
22	21,9925	0,5759	52	51,9822	1,3612	82	81,9719	2,1465
23	22,9921	0,6021	53	52,9818	1,3874	83	82,9716	2,1727
24	23,9918	0,6282	54	53,9815	1,4136	84	83,9712	2,1989
25	24,9914	0,6544	55	54,9812	1,4397	85	84,9709	2,2250
26	25,9911	0,6806	56	55,9808	1,4659	86	85,9705	2,2512
27	26,9907	0,7068	57	56,9805	1,4921	87	86,9702	2,2774
28	27,9904	0,7330	58	57,9801	1,5183	88	87,9698	2,3036
29	28,9901	0,7591	59	58,9798	1,5444	89	88,9695	2,3297
30	29,9897	0,7853	60	59,9794	1,5706	90	89,9692	2,3559
31	30,9894	0,8115	61	60,9791	1,5968	91	90,9688	2,3821
32	31,9890	0,8377	62	61,9788	1,6230	92	91,9685	2,4083
33	32,9887	0,8638	63	62,9784	1,6491	93	92,9681	2,4345
34	33,9883	0,8900	64	63,9781	1,6753	94	93,9678	2,4606
35	34,9880	0,9162	65	64,9777	1,7015	95	94,9674	2,4868
36	35,9877	0,9424	66	65,9774	1,7277	96	95,9671	2,5130
37	36,9873	0,9685	67	66,9770	1,7539	97	96,9668	2,5392
38	37,9870	0,9947	68	67,9767	1,7800	98	97,9664	2,5653
39	38,9866	1,0209	69	68,9764	1,8062	99	98,9661	2,5915
R	y	x	R	y	x	R	y	x

88° 30′

2°

R	x	y	R	x	y	R	x	y
10	9,9939	0,3490	40	39,9756	1,3960	70	69,9574	2,4430
11	10,9933	0,3839	41	40,9750	1,4309	71	70,9567	2,4779
12	11,9927	0,4188	42	41,9744	1,4658	72	71,9561	2,5128
13	12,9921	0,4537	43	42,9738	1,5007	73	72,9555	2,5477
14	13,9915	0,4886	44	43,9732	1,5356	74	73,9549	2,5826
15	14,9909	0,5235	45	44,9726	1,5705	75	74,9543	2,6175
16	15,9903	0,5584	46	45,9720	1,6054	76	75,9537	2,6524
17	16,9896	0,5933	47	46,9714	1,6403	77	76,9531	2,6873
18	17,9890	0,6282	48	47,9708	1,6752	78	77,9525	2,7222
19	18,9884	0,6631	49	48,9702	1,7101	79	78,9519	2,7571
20	19,9878	0,6980	50	49,9695	1,7450	80	79,9513	2,7920
21	20,9872	0,7329	51	50,9689	1,7799	81	80,9507	2,8269
22	21,9866	0,7678	52	51,9683	1,8148	82	81,9500	2,8618
23	22,9860	0,8027	53	52,9677	1,8497	83	82,9494	2,8967
24	23,9854	0,8376	54	53,9671	1,8846	84	83,9488	2,9316
25	24,9848	0,8725	55	54,9665	1,9195	85	84,9482	2,9665
26	25,9842	0,9074	56	55,9659	1,9544	86	85,9476	3,0014
27	26,9836	0,9423	57	56,9653	1,9893	87	86,9470	3,0363
28	27,9829	0,9772	58	57,9647	2,0242	88	87,9464	3,0712
29	28,9823	1,0121	59	58,9641	2,0591	89	88,9458	3,1061
30	29,9817	1,0470	60	59,9634	2,0940	90	89,9452	3,1410
31	30,9811	1,0819	61	60,9628	2,1289	91	90,9446	3,1759
32	31,9805	1,1168	62	61,9622	2,1638	92	91,9440	3,2108
33	32,9799	1,1517	63	62,9616	2,1987	93	92,9433	3,2457
34	33,9793	1,1866	64	63,9610	2,2336	94	93,9427	3,2806
35	34,9787	1,2215	65	64,9604	2,2685	95	94,9421	3,3155
36	35,9781	1,2564	66	65,9598	2,3034	96	95,9415	3,3504
37	36,9775	1,2913	67	66,9592	2,3383	97	96,9409	3,3853
38	37,9769	1,3262	68	67,9586	2,3732	98	97,9403	3,4202
39	38,9762	1,3611	69	68,9580	2,4081	99	98,9397	3,4551
R	y	x	R	y	x	R	y	x

88°

2° 30′

R	x	y	R	x	y	R	x	y
10	9,9905	0,4362	40	39,9619	1,7448	70	69,9334	3,0534
11	10,9895	0,4798	41	40,9610	1,7884	71	70,9324	3,0970
12	11,9886	0,5234	42	41,9600	1,8320	72	71,9315	3,1406
13	12,9876	0,5671	43	42,9591	1,8756	73	72,9305	3,1842
14	13,9867	0,6107	44	43,9581	1,9193	74	73,9296	3,2278
15	14,9857	0,6543	45	44,9572	1,9629	75	74,9286	3,2715
16	15,9848	0,6979	46	45,9562	2,0065	76	75,9277	3,3151
17	16,9838	0,7415	47	46,9553	2,0501	77	76,9267	3,3587
18	17,9829	0,7851	48	47,9543	2,0937	78	77,9258	3,4023
19	18,9819	0,8288	49	48,9534	2,1374	79	78,9248	3,4459
20	19,9810	0,8724	50	49,9524	2,1810	80	79,9239	3,4896
21	20,9800	0,9160	51	50,9515	2,2246	81	80,9229	3,5332
22	21,9791	0,9596	52	51,9505	2,2682	82	81,9220	3,5768
23	22,9781	1,0032	53	52,9496	2,3118	83	82,9210	3,6204
24	23,9772	1,0469	54	53,9486	2,3554	84	83,9201	3,6640
25	24,9762	1,0905	55	54,9477	2,3991	85	84,9191	3,7076
26	25,9753	1,1341	56	55,9467	2,4427	86	85,9181	3,7513
27	26,9743	1,1777	57	56,9457	2,4863	87	86,9172	3,7949
28	27,9734	1,2213	58	57,9448	2,5299	88	87,9162	3,8385
29	28,9724	1,2650	59	58,9438	2,5735	89	88,9153	3,8821
30	29,9714	1,3086	60	59,9429	2,6172	90	89,9143	3,9257
31	30,9705	1,3522	61	60,9419	2,6608	91	90,9134	3,9694
32	31,9695	1,3958	62	61,9410	2,7044	92	91,9124	4,0130
33	32,9686	1,4394	63	62,9400	2,7480	93	92,9115	4,0566
34	33,9676	1,4831	64	63,9391	2,7916	94	93,9105	4,1002
35	34,9667	1,5267	65	64,9381	2,8353	95	94,9096	4,1438
36	35,9657	1,5703	66	65,9372	2,8789	96	95,9086	4,1875
37	36,9648	1,6139	67	66,9362	2,9225	97	96,9077	4,2311
38	37,9638	1,6575	68	67,9353	2,9661	98	97,9067	4,2747
39	38,9629	1,7012	69	68,9343	3,0097	99	98,9058	4,3183
R	y	x	R	y	x	R	y	x

87° 30′

3°

R	x	y	R	x	y	R	x	y
10	9,9863	0,5234	40	39,9452	2,0934	70	69,9041	3,6635
11	10,9849	0,5757	41	40,9438	2,1458	71	70,9027	3,7159
12	11,9836	0,6280	42	41,9424	2,1981	72	71,9013	3,7682
13	12,9822	0,6804	43	42,9411	2,2504	73	72,9000	3,8205
14	13,9808	0,7327	44	43,9397	2,3028	74	73,8986	3,8729
15	14,9794	0,7850	45	44,9383	2,3551	75	74,8972	3,9252
16	15,9781	0,8374	46	45,9370	2,4075	76	75,8958	3,9775
17	16,9767	0,8897	47	46,9356	2,4598	77	76,8945	4,0299
18	17,9753	0,9420	48	47,9342	2,5121	78	77,8931	4,0822
19	18,9740	0,9944	49	48,9328	2,5645	79	78,8917	4,1345
20	19,9726	1,0467	50	49,9315	2,6168	80	79,8904	4,1869
21	20,9712	1,0991	51	50,9301	2,6691	81	80,8890	4,2392
22	21,9698	1,1514	52	51,9287	2,7215	82	81,8876	4,2915
23	22,9685	1,2037	53	52,9274	2,7738	83	82,8863	4,3439
24	23,9671	1,2561	54	53,9260	2,8261	84	83,8849	4,3962
25	24,9657	1,3084	55	54,9246	2,8785	85	84,8835	4,4486
26	25,9644	1,3607	56	55,9233	2,9308	86	85,8821	4,5009
27	26,9630	1,4131	57	56,9219	2,9831	87	86,8808	4,5532
28	27,9616	1,4654	58	57,9205	3,0355	88	87,8794	4,6056
29	28,9603	1,5177	59	58,9191	3,0878	89	88,8780	4,6579
30	29,9589	1,5701	60	59,9178	3,1402	90	89,8767	4,7102
31	30,9575	1,6224	61	60,9164	3,1925	91	90,8753	4,7626
32	31,9561	1,6748	62	61,9150	3,2448	92	91,8739	4,8149
33	32,9548	1,7271	63	62,9137	3,2972	93	92,8725	4,8672
34	33,9534	1,7794	64	63,9123	3,3495	94	93,8712	4,9196
35	34,9520	1,8318	65	64,9109	3,4018	95	94,8698	4,9719
36	35,9507	1,8841	66	65,9095	3,4542	96	95,8684	5,0243
37	36,9493	1,9364	67	66,9082	3,5065	97	96,8671	5,0766
38	37,9479	1,9888	68	67,9068	3,5588	98	97,8657	5,1289
39	38,9466	2,0411	69	68,9054	3,6112	99	98,8643	5,1813
R	y	x	R	y	x	R	y	x

87°

3° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,9813	0,6105	40	39,9254	2,4419	70	69,8694	4,2734
11	10,9795	0,6715	41	40,9235	2,5030	71	70,8676	4,3344
12	11,9776	0,7326	42	41,9217	2,5640	72	71,8657	4,3955
13	12,9758	0,7936	43	42,9198	2,6251	73	72,8638	4,4565
14	13,9739	0,8547	44	43,9179	2,6861	74	73,8620	4,5176
15	14,9720	0,9157	45	44,9161	2,7472	75	74,8601	4,5786
16	15,9702	0,9768	46	45,9142	2,8082	76	75,8582	4,6397
17	16,9683	1,0378	47	46,9123	2,8693	77	76,8564	4,7007
18	17,9664	1,0989	48	47,9105	2,9303	78	77,8545	4,7618
19	18,9646	1,1599	49	48,9086	2,9914	79	78,8526	4,8228
20	19,9627	1,2210	50	49,9067	3,0524	80	79,8508	4,8839
21	20,9608	1,2820	51	50,9049	3,1135	81	80,8489	4,9449
22	21,9590	1,3431	52	51,9030	3,1745	82	81,8471	5,0060
23	22,9571	1,4041	53	52,9011	3,2356	83	82,8452	5,0670
24	23,9552	1,4652	54	53,8993	3,2966	84	83,8433	5,1281
25	24,9534	1,5262	55	54,8974	3,3577	85	84,8415	5,1891
26	25,9515	1,5873	56	55,8955	3,4187	86	85,8396	5,2502
27	26,9496	1,6483	57	56,8937	3,4798	87	86,8377	5,3112
28	27,9478	1,7094	58	57,8918	3,5408	88	87,8359	5,3723
29	28,9459	1,7704	59	58,8900	3,6019	89	88,8340	5,4333
30	29,9440	1,8315	60	59,8881	3,6629	90	89,8321	5,4944
31	30,9422	1,8925	61	60,8862	3,7240	91	90,8303	5,5554
32	31,9403	1,9536	62	61,8844	3,7850	92	91,8284	5,6165
33	32,9384	2,0146	63	62,8825	3,8461	93	92,8265	5,6775
34	33,9366	2,0757	64	63,8806	3,9071	94	93,8247	5,7386
35	34,9347	2,1367	65	64,8788	3,9682	95	94,8228	5,7996
36	35,9329	2,1977	66	65,8769	4,0292	96	95,8209	5,8607
37	36,9310	2,2588	67	66,8750	4,0903	97	96,8191	5,9217
38	37,9291	2,3198	68	67,8732	4,1513	98	97,8172	5,9828
39	38,9273	2,3809	69	68,8713	4,2123	99	98,8153	6,0438
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

86° 30′

4°

R	x	y	R	x	y	R	x	y
10	9,9756	0,6976	40	39,9026	2,7903	70	69,8295	4,8830
11	10,9732	0,7673	41	40,9001	2,8600	71	70,8270	4,9527
12	11,9708	0,8371	42	41,8977	2,9298	72	71,8246	5,0225
13	12,9683	0,9068	43	42,8953	2,9995	73	72,8222	5,0922
14	13,9659	0,9766	44	43,8928	3,0693	74	73,8197	5,1620
15	14,9635	1,0463	45	44,8904	3,1390	75	74,8173	5,2317
16	15,9610	1,1161	46	45,8879	3,2088	76	75,8149	5,3015
17	16,9586	1,1859	47	46,8855	3,2786	77	76,8124	5,3712
18	17,9562	1,2556	48	47,8831	3,3483	78	77,8100	5,4410
19	18,9537	1,3254	49	48,8806	3,4181	79	78,8076	5,5108
20	19,9513	1,3951	50	49,8782	3,4878	80	79,8051	5,5805
21	20,9488	1,4649	51	50,8758	3,5576	81	80,8027	5,6503
22	21,9464	1,5346	52	51,8733	3,6273	82	81,8003	5,7200
23	22,9440	1,6044	53	52,8709	3,6971	83	82,7978	5,7898
24	23,9415	1,6742	54	53,8685	3,7668	84	83,7954	5,8595
25	24,9391	1,7439	55	54,8660	3,8366	85	84,7929	5,9293
26	25,9367	1,8137	56	55,8636	3,9064	86	85,7905	5,9991
27	26,9342	1,8834	57	56,8612	3,9761	87	86,7881	6,0688
28	27,9318	1,9532	58	57,8587	4,0459	88	87,7856	6,1386
29	28,9294	2,0229	59	58,8563	4,1156	89	88,7832	6,2083
30	29,9269	2,0927	60	59,8538	4,1854	90	89,7808	6,2781
31	30,9245	2,1625	61	60,8514	4,2551	91	90,7783	6,3478
32	31,9220	2,2322	62	61,8490	4,3249	92	91,7759	6,4176
33	32,9196	2,3020	63	62,8465	4,3947	93	92,7735	6,4874
34	33,9172	2,3717	64	63,8441	4,4644	94	93,7710	6,5571
35	34,9147	2,4415	65	64,8417	4,5342	95	94,7686	6,6269
36	35,9123	2,5112	66	65,8392	4,6039	96	95,7661	6,6966
37	36,9099	2,5810	67	66,8368	4,6737	97	96,7637	6,7664
38	37,9074	2,6507	68	67,8344	4,7434	98	97,7613	6,8361
39	38,9050	2,7205	69	68,8319	4,8132	99	98,7588	6,9059
R	y	x	R	y	x	R	y	x

86°

4° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,9692	0,7846	40	39,8767	3,1384	70	69,7842	5,4921
11	10,9661	0,8631	41	40,8736	3,2168	71	70,7811	5,5706
12	11,9630	0,9415	42	41,8705	3,2953	72	71,7780	5,6491
13	12,9599	1,0200	43	42,8674	3,3737	73	72,7750	5,7275
14	13,9568	1,0984	44	43,8644	3,4522	74	73,7719	5,8060
15	14,9538	1,1769	45	44,8613	3,5307	75	74,7688	5,8844
16	15,9507	1,2553	46	45,8582	3,6091	76	75,7657	5,9629
17	16,9476	1,3338	47	46,8551	3,6876	77	76,7626	6,0414
18	17,9445	1,4123	48	47,8520	3,7660	78	77,7596	6,1198
19	18,9414	1,4907	49	48,8489	3,8445	79	78,7565	6,1983
20	19,9383	1,5692	50	49,8459	3,9230	80	79,7534	6,2767
21	20,9353	1,6476	51	50,8428	4,0014	81	80,7503	6,3552
22	21,9322	1,7261	52	51,8397	4,0799	82	81,7472	6,4336
23	22,9291	1,8046	53	52,8366	4,1583	83	82,7441	6,5121
24	23,9260	1,8830	54	53,8335	4,2368	84	83,7411	6,5906
25	24,9229	1,9615	55	54,8305	4,3153	85	84,7380	6,6690
26	25,9199	2,0399	56	55,8274	4,3937	86	85,7349	6,7475
27	26,9168	2,1184	57	56,8243	4,4722	87	86,7318	6,8259
28	27,9137	2,1969	58	57,8212	4,5506	88	87,7287	6,9044
29	28,9106	2,2753	59	58,8181	4,6291	89	88,7256	6,9829
30	29,9075	2,3538	60	59,8150	4,7075	90	89,7226	7,0613
31	30,9044	2,4322	61	60,8120	4,7860	91	90,7195	7,1398
32	31,9014	2,5107	62	61,8089	4,8645	92	91,7164	7,2182
33	32,8983	2,5892	63	62,8058	4,9429	93	92,7133	7,2967
34	33,8952	2,6676	64	63,8027	5,0214	94	93,7102	7,3752
35	34,8921	2,7461	65	64,7996	5,0998	95	94,7071	7,4536
36	35,8890	2,8245	66	65,7965	5,1783	96	95,7041	7,5321
37	36,8859	2,9030	67	66,7935	5,2568	97	96,7010	7,6105
38	37,8829	2,9814	68	67,7904	5,3352	98	97,6979	7,6890
39	38,8798	3,0599	69	68,7873	5,4137	99	98,6948	7,7675
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

85° 30′

5°

R	x	y	R	x	y	R	x	y
10	9,9619	0,8716	40	39,8478	3,4862	70	69,7336	6,1009
11	10,9581	0,9587	41	40,8440	3,5734	71	70,7298	6,1881
12	11,9543	1,0459	42	41,8402	3,6605	72	71,7260	6,2752
13	12,9505	1,1330	43	42,8364	3,7477	73	72,7222	6,3624
14	13,9467	1,2202	44	43,8326	3,8349	74	73,7184	6,4495
15	14,9429	1,3073	45	44,8288	3,9220	75	74,7146	6,5367
16	15,9391	1,3945	46	45,8250	4,0092	76	75,7108	6,6238
17	16,9353	1,4816	47	46,8212	4,0963	77	76,7070	6,7110
18	17,9315	1,5688	48	47,8173	4,1835	78	77,7032	6,7981
19	18,9277	1,6560	49	48,8135	4,2706	79	78,6994	6,8853
20	19,9239	1,7431	50	49,8097	4,3578	80	79,6956	6,9725
21	20,9201	1,8303	51	50,8059	4,4449	81	80,6918	7,0596
22	21,9163	1,9174	52	51,8021	4,5321	82	81,6880	7,1468
23	22,9125	2,0046	53	52,7983	4,6193	83	82,6842	7,2339
24	23,9087	2,0917	54	53,7945	4,7064	84	83,6804	7,3211
25	24,9049	2,1789	55	54,7907	4,7936	85	84,6765	7,4082
26	25,9011	2,2660	56	55,7869	4,8807	86	85,6727	7,4954
27	26,8973	2,3532	57	56,7831	4,9679	87	86,6689	7,5825
28	27,8935	2,4404	58	57,7793	5,0550	88	87,6651	7,6697
29	28,8896	2,5275	59	58,7755	5,1422	89	88,6613	7,7569
30	29,8858	2,6147	60	59,7717	5,2293	90	89,6575	7,8440
31	30,8820	2,7018	61	60,7679	5,3165	91	90,6537	7,9312
32	31,8782	2,7890	62	61,7641	5,4037	92	91,6499	8,0183
33	32,8744	2,8761	63	62,7603	5,4908	93	92,6461	8,1055
34	33,8706	2,9633	64	63,7565	5,5780	94	93,6423	8,1926
35	34,8668	3,0505	65	64,7527	5,6651	95	94,6385	8,2798
36	35,8630	3,1376	66	65,7489	5,7523	96	95,6347	8,3670
37	36,8592	3,2248	67	66,7450	5,8394	97	96,6309	8,4541
38	37,8554	3,3119	68	67,7412	5,9266	98	97,6271	8,5413
39	38,8516	3,3991	69	68,7374	6,0137	99	98,6233	8,6284
R	y	x	R	y	x	R	y	x

85°

5° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,9540	0,9585	40	39,8158	3,8338	70	69,6777	6,7092
11	10,9494	1,0543	41	40,8112	3,9297	71	70,6731	6,8050
12	11,9448	1,1501	42	41,8066	4,0255	72	71,6685	6,9009
13	12,9402	1,2460	43	42,8020	4,1214	73	72,6639	6,9967
14	13,9355	1,3418	44	43,7974	4,2172	74	73,6593	7,0926
15	14,9309	1,4377	45	44,7928	4,3131	75	74,6547	7,1884
16	15,9263	1,5335	46	45,7882	4,4089	76	75,6501	7,2843
17	16,9217	1,6294	47	46,7836	4,5048	77	76,6455	7,3801
18	17,9171	1,7252	48	47,7790	4,6006	78	77,6409	7,4760
19	18,9125	1,8211	49	48,7744	4,6964	79	78,6363	7,5718
20	19,9079	1,9169	50	49,7698	4,7923	80	79,6317	7,6677
21	20,9033	2,0128	51	50,7652	4,8881	81	80,6271	7,7635
22	21,8987	2,1086	52	51,7606	4,9840	82	81,6225	7,8594
23	22,8941	2,2045	53	52,7560	5,0798	83	82,6179	7,9552
24	23,8895	2,3003	54	53,7514	5,1757	84	83,6133	8,0510
25	24,8849	2,3961	55	54,7468	5,2715	85	84,6087	8,1469
26	25,8803	2,4920	56	55,7422	5,3674	86	85,6041	8,2427
27	26,8757	2,5878	57	56,7376	5,4632	87	86,5995	8,3386
28	27,8711	2,6837	58	57,7330	5,5591	88	87,5949	8,4344
29	28,8665	2,7795	59	58,7284	5,6549	89	88,5903	8,5303
30	29,8619	2,8754	60	59,7238	5,7507	90	89,5857	8,6261
31	30,8573	2,9712	61	60,7192	5,8466	91	90,5811	8,7220
32	31,8527	3,0671	62	61,7146	5,9424	92	91,5765	8,8178
33	32,8481	3,1629	63	62,7100	6,0383	93	92,5718	8,9137
34	33,8435	3,2588	64	63,7054	6,1341	94	93,5672	9,0095
35	34,8389	3,3546	65	64,7008	6,2300	95	94,5626	9,1053
36	35,8343	3,4504	66	65,6961	6,3258	96	95,5580	9,2012
37	36,8297	3,5463	67	66,6915	6,4217	97	96,5534	9,2970
38	37,8251	3,6421	68	67,6869	6,5175	98	97,5488	9,3929
39	38,8205	3,7380	69	68,6823	6,6134	99	98,5442	9,4887
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

84° 30′

6°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,9452	1,0453	40	39,7809	4,1811	70	69,6165	7,3170
11	10,9397	1,1498	41	40,7754	4,2857	71	70,6111	7,4215
12	11,9343	1,2543	42	41,7699	4,3902	72	71,6056	7,5260
13	12,9288	1,3589	43	42,7644	4,4947	73	72,6001	7,6306
14	13,9233	1,4634	44	43,7590	4,5993	74	73,5946	7,7351
15	14,9178	1,5679	45	44,7535	4,7038	75	74,5891	7,8396
16	15,9124	1,6725	46	45,7480	4,8083	76	75,5837	7,9442
17	16,9069	1,7770	47	46,7425	4,9128	77	76,5782	8,0487
18	17,9014	1,8815	48	47,7371	5,0174	78	77,5727	8,1532
19	18,8959	1,9860	49	48,7316	5,1219	79	78,5672	8,2577
20	19,8904	2,0906	50	49,7261	5,2264	80	79,5618	8,3623
21	20,8850	2,1951	51	50,7206	5,3310	81	80,5563	8,4668
22	21,8795	2,2996	52	51,7151	5,4355	82	81,5508	8,5713
23	22,8740	2,4042	53	52,7097	5,5400	83	82,5453	8,6759
24	23,8685	2,5087	54	53,7042	5,6445	84	83,5398	8,7804
25	24,8630	2,6132	55	54,6987	5,7491	85	84,5344	8,8849
26	25,8576	2,7177	56	55,6932	5,8536	86	85,5289	8,9894
27	26,8521	2,8223	57	56,6877	5,9581	87	86,5234	9,0940
28	27,8466	2,9268	58	57,6823	6,0627	88	87,5179	9,1985
29	28,8411	3,0313	59	58,6768	6,1672	89	88,5124	9,3030
30	29,8357	3,1359	60	59,6713	6,2717	90	89,5070	9,4076
31	30,8302	3,2404	61	60,6658	6,3762	91	90,5015	9,5121
32	31,8247	3,3449	62	61,6604	6,4808	92	91,4960	9,6166
33	32,8192	3,4494	63	62,6549	6,5853	93	92,4905	5,7211
34	33,8137	3,5540	64	63,6494	6,6898	94	93,4851	9,8257
35	34,8083	3,6585	65	64,6439	6,7943	95	94,4796	9,9302
36	35,8028	3,7630	66	65,6384	6,8989	96	95,4741	10,0347
37	36,7973	3,8676	67	66,6330	7,0034	97	96,4686	10,1393
38	37,7918	3,9721	68	67,6275	7,1079	98	97,4631	10,2438
39	38,7864	4,0766	69	68,6220	7,2125	99	98,4577	10,3483
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

84°

6° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,9357	1,1320	40	39,7429	4,5281	70	69,5500	7,9242
11	10,9293	1,2452	41	40,7364	4,6413	71	70,5436	8,0374
12	11,9229	1,3584	42	41,7300	4,7545	72	71,5372	8,1506
13	12,9164	1,4716	43	42,7236	4,8677	73	72,5307	8,2638
14	13,9100	1,5848	44	43,7172	4,9809	74	73,5243	8,3770
15	14,9036	1,6980	45	44,7107	5,0941	75	74,5179	8,4902
16	15,8971	1,8113	46	45,7043	5,2073	76	75,5115	8,6034
17	16,8907	1,9245	47	46,6979	5,3206	77	76,5050	8,7166
18	17,8843	2,0377	48	47,6914	5,4338	78	77,4986	8,8299
19	18,8779	2,1509	49	48,6850	5,5470	79	78,4922	8,9431
20	19,8714	2,2641	50	49,6786	5,6602	80	79,4857	9,0563
21	20,8650	2,3773	51	50,6722	5,7734	81	80,4793	9,1695
22	21,8586	2,4905	52	51,6657	5,8866	82	81,4729	9,2827
23	22,8522	2,6037	53	52,6593	5,9998	83	82,4665	9,3959
24	23,8457	2,7169	54	53,6529	6,1130	84	83,4600	9,5091
25	24,8393	2,8301	55	54,6465	6,2262	85	84,4536	9,6223
26	25,8329	2,9433	56	55,6400	6,3394	86	85,4472	9,7355
27	26,8264	3,0565	57	56,6336	6,4526	87	86,4408	9,8487
28	27,8200	3,1697	58	57,6272	6,5658	88	87,4343	9,9619
29	28,8136	3,2829	59	58,6207	6,6790	89	88,4279	10,0751
30	29,8072	3,3961	60	59,6143	6,7922	90	89,4215	10,1883
31	30,8007	3,5093	61	60,6079	6,9054	91	90,4150	10,3015
32	31,7943	3,6225	62	61,6015	7,0186	92	91,4086	10,4147
33	32,7879	3,7357	63	62,5950	7,1318	93	92,4022	10,5279
34	33,7814	3,8489	64	63,5886	7,2450	94	93,3958	10,6411
35	34,7750	3,9621	65	64,5822	7,3582	95	94,3893	10,7543
36	35,7686	4,0753	66	65,5757	7,4714	96	95,3829	10,8675
37	36,7622	4,1885	67	66,5693	7,5846	97	96,3765	10,9807
38	37,7557	4,3017	68	67,5629	7,6978	98	97,3700	11,0939
39	38,7493	4,4149	69	68,5565	7,8110	99	98,3636	11,2071
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

83° 30′

7°

R	x	y	R	x	y	R	x	y
10	9,9255	1,2187	40	39,7018	4,8748	70	69,4782	8,5309
11	10,9180	1,3406	41	40,6944	4,9966	71	70,4708	8,6527
12	11,9106	1,4624	42	41,6869	5,1185	72	71,4633	8,7746
13	12,9031	1,5843	43	42,6795	5,2404	73	72,4559	8,8965
14	13,8956	1,7062	44	43,6720	5,3623	74	73,4484	9,0183
15	14,8882	1,8280	45	44,6646	5,4841	75	74,4410	9,1402
16	15,8807	1,9499	46	45,6571	5,6060	76	75,4335	9,2621
17	16,8733	2,0718	47	46,6497	5,7279	77	76,4261	9,3839
18	17,8658	2,1936	48	47,6422	5,8497	78	77,4186	9,5058
19	18,8584	2,3155	49	48,6348	5,9716	79	78,4111	9,6277
20	19,8509	2,4374	50	49,6273	6,0935	80	79,4037	9,7495
21	20,8435	2,5593	51	50,6199	6,2153	81	80,3962	9,8714
22	21,8360	2,6811	52	51,6124	6,3372	82	81,3888	9,9933
23	22,8286	2,8030	53	52,6049	6,4591	83	82,3813	10,1152
24	23,8211	2,9249	54	53,5975	6,5809	84	83,3739	10,2370
25	24,8137	3,0467	55	54,5900	6,7028	85	84,3664	10,3589
26	25,8062	3,1686	56	55,5826	6,8247	86	85,3590	10,4808
27	26,7987	3,2905	57	56,5751	6,9466	87	86,3515	10,6026
28	27,7913	3,4123	58	57,5677	7,0684	88	87,3441	10,7245
29	28,7838	3,5342	59	58,5602	7,1903	89	88,3366	10,8464
30	29,7764	3,6561	60	59,5528	7,3122	90	89,3292	10,9682
31	30,7689	3,7779	61	60,5453	7,4340	91	90,3217	11,0901
32	31,7615	3,8998	62	61,5379	7,5559	92	91,3142	11,2120
33	32,7540	4,0217	63	62,5304	7,6778	93	92,3068	11,3338
34	33,7466	4,1436	64	63,5230	7,7996	94	93,2993	11,4557
35	34,7391	4,2654	65	64,5155	7,9215	95	94,2919	11,5776
36	35,7317	4,3873	66	65,5080	8,0434	96	95,2844	11,6995
37	36,7242	4,5092	67	66,5006	8,1652	97	96,2770	11,8213
38	37,7168	4,6310	68	67,4931	8,2871	98	97,2695	11,9432
39	38,7093	4,7529	69	68,4857	8,4090	99	98,2621	12,0651
R	y	x	R	y	x	R	y	x

83°

7° 30′

R	x	y	R	x	y	R	x	y
10	9,9144	1,3053	40	39,6578	5,2210	70	69,4011	9,1368
11	10,9059	1,4358	41	40,6492	5,3516	71	70,3926	9,2674
12	11,8973	1,5663	42	41,6407	5,4821	72	71,3840	9,3979
13	12,8888	1,6968	43	42,6321	5,6126	73	72,3755	9,5284
14	13,8802	1,8274	44	43,6236	5,7432	74	73,3669	9,6589
15	14,8717	1,9579	45	44,6150	5,8737	75	74,3584	9,7895
16	15,8631	2,0884	46	45,6065	6,0042	76	75,3498	9,9200
17	16,8546	2,2189	47	46,5979	6,1347	77	76,3413	10,0505
18	17,8460	2,3495	48	47,5894	6,2653	78	77,3327	10,1810
19	18,8375	2,4800	49	48,5808	6,3958	79	78,3241	10,3116
20	19,8289	2,6105	50	49,5722	6,5263	80	79,3156	10,4421
21	20,8203	2,7410	51	50,5637	6,6568	81	80,3070	10,5726
22	21,8118	2,8716	52	51,5551	6,7874	82	81,2985	10,7031
23	22,8032	3,0021	53	52,5466	6,9179	83	82,2899	10,8337
24	23,7947	3,1326	54	53,5380	7,0484	84	83,2814	10,9642
25	24,7861	3,2632	55	54,5295	7,1789	85	84,2728	11,0947
26	25,7776	3,3937	56	55,5209	7,3095	86	85,2643	11,2253
27	26,7690	3,5242	57	56,5124	7,4400	87	86,2557	11,3558
28	27,7605	3,6547	58	57,5038	7,5705	88	87,2471	11,4863
29	28,7519	3,7853	59	58,4952	7,7010	89	88,2386	11,6168
30	29,7433	3,9158	60	59,4867	7,8316	90	89,2300	11,7474
31	30,7348	4,0463	61	60,4781	7,9621	91	90,2215	11,8779
32	31,7262	4,1768	62	61,4696	8,0926	92	91,2129	12,0084
33	32,7177	4,3074	63	62,4610	8,2231	93	92,2044	12,1389
34	33,7091	4,4379	64	63,4525	8,3537	94	93,1958	12,2695
35	34,7006	4,5684	65	64,4439	8,4842	95	94,1873	12,4000
36	35,6920	4,6989	66	65,4354	8,6147	96	95,1787	12,5305
37	36,6835	4,8295	67	66,4268	8,7453	97	96,1702	12,6610
38	37,6749	4,9600	68	67,4183	8,8758	98	97,1616	12,7916
39	38,6663	5,0905	69	68,4097	9,0063	99	98,1530	12,9221
R	y	x	R	y	x	R	y	x

82° 30′

8°

R	x	y	R	x	y	R	x	y
10	9,9027	1,3917	40	39,6107	5,5669	70	69,3188	9,7421
11	10,8929	1,5309	41	40,6010	5,7061	71	70,3090	9,8813
12	11,8832	1,6701	42	41,5913	5,8453	72	71,2993	10,0205
13	12,8735	1,8093	43	42,5815	5,9844	73	72,2896	10,1596
14	13,8638	1,9484	44	43,5718	6,1236	74	73,2798	10,2988
15	14,8540	2,0876	45	44,5621	6,2628	75	74,2701	10,4380
16	15,8443	2,2268	46	45,5523	6,4020	76	75,2604	10,5772
17	16,8346	2,3659	47	46,5426	6,5411	77	76,2506	10,7163
18	17,8248	2,5051	48	47,5329	6,6803	78	77,2409	10,8555
19	18,8151	2,6443	49	48,5231	6,8195	79	78,2312	10,9947
20	19,8054	2,7835	50	49,5134	6,9587	80	79,2214	11,1338
21	20,7956	2,9226	51	50,5037	7,0978	81	80,2117	11,2730
22	21,7859	3,0618	52	51,4939	7,2370	82	81,2020	11,4122
23	22,7762	3,2010	53	52,4842	7,3762	83	82,1922	11,5514
24	23,7664	3,3402	54	53,4745	7,5153	84	83,1825	11,6905
25	24,7567	3,4793	55	54,4647	7,6545	85	84,1728	11,8297
26	25,7470	3,6185	56	55,4550	7,7937	86	85,1631	11,9689
27	26,7372	3,7577	57	56,4453	7,9329	87	86,1533	12,1081
28	27,7275	3,8968	58	57,4355	8,0720	88	87,1436	12,2472
29	28,7178	4,0360	59	58,4258	8,2112	89	88,1339	12,3864
30	29,7080	4,1752	60	59,4161	8,3504	90	89,1241	12,5256
31	30,6983	4,3144	61	60,4064	8,4896	91	90,1144	12,6648
32	31,6886	4,4535	62	61,3966	8,6287	92	91,1047	12,8039
33	32,6788	4,5927	63	62,3869	8,7679	93	92,0949	12,9431
34	33,6691	4,7319	64	63,3772	8,9071	94	93,0852	13,0823
35	34,6594	4,8711	65	64,3674	9,0463	95	94,0755	13,2214
36	35,6497	5,0102	66	65,3577	9,1854	96	95,0657	13,3606
37	36,6399	5,1494	67	66,3480	9,3246	97	96,0560	13,4998
38	37,6302	5,2886	68	67,3382	9,4638	98	97,0463	13,6390
39	38,6205	5,4278	69	68,3285	9,6029	99	98,0365	13,7781
R	y	x	R	y	x	R	y	x

82°

8°30′

R	x	y	R	x	y	R	x	y
10	9,8902	1,4781	40	39,5606	5,9124	70	69,2311	10,3467
11	10,8792	1,6259	41	40,5497	6,0602	71	70,2201	10,4945
12	11,8682	1,7737	42	41,5387	6,2080	72	71,2091	10,6423
13	12,8572	1,9215	43	42,5277	6,3558	73	72,1982	10,7901
14	13,8462	2,0693	44	43,5167	6,5036	74	73,1872	10,9379
15	14,8352	2,2171	45	44,5057	6,6514	75	74,1762	11,0857
16	15,8243	2,3650	46	45,4947	6,7992	76	75,1652	11,2335
17	16,8133	2,5128	47	46,4837	6,9470	77	76,1542	11,3813
18	17,8023	2,6606	48	47,4728	7,0949	78	77,1432	11,5291
19	18,7913	2,8084	49	48,4618	7,2427	79	78,1323	11,6769
20	19,7803	2,9562	50	49,4508	7,3905	80	79,1213	11,8248
21	20,7693	3,1040	51	50,4398	7,5383	81	80,1103	11,9726
22	21,7583	3,2518	52	51,4288	7,6861	82	81,0993	12,1204
23	22,7474	3,3996	53	52,4178	7,8339	83	82,0883	12,2682
24	23,7364	3,5474	54	53,4069	7,9817	84	83,0773	12,4160
25	24,7254	3,6952	55	54,3959	8,1295	85	84,0663	12,5638
26	25,7144	3,8430	56	55,3849	8,2773	86	85,0554	12,7116
27	26,7034	3,9909	57	56,3739	8,4251	87	86,0444	12,8594
28	27,6924	4,1387	58	57,3629	8,5729	88	87,0334	13,0072
29	28,6815	4,2865	59	58,3519	8,7208	89	88,0224	13,1550
30	29,6705	4,4343	60	59,3410	8,8686	90	89,0114	13,3028
31	30,6595	4,5821	61	60,3300	9,0164	91	90,0004	13,4507
32	31,6485	4,7299	62	61,3190	9,1642	92	90,9895	13,5985
33	32,6375	4,8777	63	62,3080	9,3120	93	91,9785	13,7463
34	33,6265	5,0255	64	63,2970	9,4598	94	92,9675	13,8941
35	34,6156	5,1733	65	64,2860	9,6076	95	93,9565	14,0419
36	35,6046	5,3211	66	65,2750	9,7554	96	94,9455	14,1897
37	36,5936	5,4689	67	66,2641	9,9032	97	95,9345	14,3375
38	37,5826	5,6168	68	67,2531	10,0510	98	96,9236	14,4853
39	38,5716	5,7646	69	68,2421	10,1988	99	97,9126	14,6331
R	y	x	R	y	x	R	y	x

81° 30′

9°

R	x	y	R	x	y	R	x	y
10	9,8769	1,5643	40	39,5075	6,2574	70	69,1382	10,9504
11	10,8646	1,7208	41	40,4952	6,4138	71	70,1259	11,1068
12	11,8523	1,8772	42	41,4829	6,5702	72	71,1136	11,2633
13	12,8399	2,0336	43	42,4706	6,7267	73	72,1012	11,4197
14	13,8276	2,1901	44	43,4583	6,8831	74	73,0889	11,5762
15	14,8153	2,3465	45	44,4460	7,0396	75	74,0766	11,7326
16	15,8030	2,5030	46	45,4337	7,1960	76	75,0643	11,8890
17	16,7907	2,6594	47	46,4214	7,3524	77	76,0520	12,0455
18	17,7784	2,8158	48	47,4090	7,5088	78	77,0397	12,2019
19	18,7661	2,9723	49	48,3967	7,6653	79	78,0274	12,3583
20	19,7538	3,1287	50	49,3844	7,8217	80	79,0151	12,5148
21	20,7415	3,2851	51	50,3721	7,9782	81	80,0028	12,6712
22	21,7291	3,4416	52	51,3598	8,1346	82	80,9904	12,8276
23	22,7168	3,5980	53	52,3475	8,2910	83	81,9781	12,9841
24	23,7045	3,7544	54	53,3352	8,4475	84	82,9658	13,1405
25	24,6922	3,9109	55	54,3229	8,6039	85	83,9535	13,2969
26	25,6799	4,0673	56	55,3105	8,7603	86	84,9412	13,4534
27	26,6676	4,2237	57	56,2982	8,9168	87	85,9289	13,6098
28	27,6553	4,3802	58	57,2859	9,0732	88	86,9166	13,7662
29	28,6430	4,5366	59	58,2736	9,2296	89	87,9043	13,9227
30	29,6307	4,6930	60	59,2613	9,3861	90	88,8920	14,0791
31	30,6183	4,8495	61	60,2490	9,5425	91	89,8796	14,2355
32	31,6060	5,0059	62	61,2367	9,6989	92	90,8673	14,3920
33	32,5937	5,1623	63	62,2244	9,8554	93	91,8550	14,5484
34	33,5814	5,3188	64	63,2121	10,0118	94	92,8427	14,7048
35	34,5691	5,4752	65	64,1997	10,1682	95	93,8304	14,8613
36	35,5568	5,6316	66	65,1874	10,3247	96	94,8181	15,0177
37	36,5445	5,7881	67	66,1751	10,4811	97	95,8058	15,1741
38	37,5322	5,9445	68	67,1628	10,6375	98	96,7935	15,3306
39	38,5198	6,1009	69	68,1505	10,7940	99	97,7811	15,4870
R	y	x	R	y	x	R	y	x

81°

9° 30′

R	x	y	R	x	y	R	x	y
10	9,8629	1,6505	40	39,4514	6,6019	70	69,0400	11,5533
11	10,8491	1,8155	41	40,4377	6,7670	71	70,0263	11,7184
12	11,8354	1,9806	42	41,4240	6,9320	72	71,0126	11,8834
13	12,8217	2,1456	43	42,4103	7,0970	73	71,9988	12,0485
14	13,8080	2,3107	44	43,3966	7,2621	74	72,9851	12,2135
15	14,7943	2,4757	45	44,3829	7,4271	75	73,9714	12,3786
16	15,7806	2,6408	46	45,3691	7,5922	76	74,9577	12,5436
17	16,7669	2,8058	47	46,3554	7,7572	77	75,9440	12,7087
18	17,7531	2,9709	48	47,3417	7,9223	78	76,9303	12,8737
19	18,7394	3,1359	49	48,3280	8,0873	79	77,9166	13,0388
20	19,7257	3,3010	50	49,3143	8,2524	80	78,9028	13,2038
21	20,7120	3,4660	51	50,3006	8,4174	81	79,8891	13,3689
22	21,6983	3,6310	52	51,2869	8,5825	82	80,8754	13,5339
23	22,6846	3,7961	53	52,2731	8,7475	83	81,8617	13,6990
24	23,6709	3,9611	54	53,2594	8,9126	84	82,8480	13,8640
25	24,6571	4,1262	55	54,2457	9,0776	85	83,8343	14,0290
26	25,6434	4,2912	56	55,2320	9,2427	86	84,8206	14,1941
27	26,6297	4,4563	57	56,2183	9,4077	87	85,8068	14,3591
28	27,6160	4,6213	58	57,2046	9,5728	88	86,7931	14,5242
29	28,6023	4,7864	59	58,1909	9,7378	89	87,7794	14,6892
30	29,5886	4,9514	60	59,1771	9,9029	90	88,7657	14,8543
31	30,5749	5,1165	61	60,1634	10,0679	91	89,7520	15,0193
32	31,5611	5,2915	62	61,1497	10,2330	92	90,7383	15,1844
33	32,5474	5,4466	63	62,1360	10,3980	93	91,7246	15,3494
34	33,5337	5,6116	64	63,1223	10,5630	94	92,7108	15,5145
35	34,5200	5,7767	65	64,1086	10,7281	95	93,6971	15,6795
36	35,5063	5,9417	66	65,0948	10,8931	96	94,6834	15,8446
37	36,4926	6,1068	67	66,0811	11,0582	97	95,6697	16,0096
38	37,4789	6,2718	68	67,0674	11,2232	98	96,6560	16,1747
39	38,4651	6,4369	69	68,0537	11,3883	99	97,6423	16,3397
R	y	x	R	y	x	R	y	x

80° 30′

10°

R	x	y	R	x	y	R	x	y
10	9,8481	1,7365	40	39,3923	6,9459	70	68,9365	12,1554
11	10,8329	1,9101	41	40,3771	7,1196	71	69,9214	12,3290
12	11,8177	2,0838	42	41,3619	7,2932	72	70,9062	12,5027
13	12,8025	2,2574	43	42,3467	7,4669	73	71,8910	12,6763
14	13,7873	2,4311	44	43,3315	7,6405	74	72,8758	12,8500
15	14,7721	2,6047	45	44,3163	7,8142	75	73,8606	13,0236
16	15,7569	2,7784	46	45,3012	7,9878	76	74,8454	13,1973
17	16,7417	2,9520	47	46,2860	8,1615	77	75,8302	13,3709
18	17,7265	3,1257	48	47,2708	8,3351	78	76,8150	13,5446
19	18,7113	3,2993	49	48,2556	8,5088	79	77,7998	13,7182
20	19,6962	3,4730	50	49,2404	8,6824	80	78,7846	13,8919
21	20,6810	3,6466	51	50,2252	8,8561	81	79,7694	14,0655
22	21,6658	3,8203	52	51,2100	9,0297	82	80,7542	14,2392
23	22,6506	3,9939	53	52,1948	9,2034	83	81,7390	14,4128
24	23,6354	4,1676	54	53,1796	9,3770	84	82,7239	14,5864
25	24,6202	4,3412	55	54,1644	9,5506	85	83,7087	14,7601
26	25,6050	4,5149	56	55,1492	9,7243	86	84,6935	14,9337
27	26,5898	4,6885	57	56,1340	9,8979	87	85,6783	15,1074
28	27,5746	4,8621	58	57,1188	10,0716	88	86,6631	15,2810
29	28,5594	5,0358	59	58,1037	10,2452	89	87,6479	15,4547
30	29,5442	5,2094	60	59,0885	10,4189	90	88,6327	15,6283
31	30,5290	5,3831	61	60,0733	10,5925	91	89,6175	15,8020
32	31,5138	5,5567	62	61,0581	10,7662	92	90,6023	15,9756
33	32,4987	5,7304	63	62,0429	10,9398	93	91,5871	16,1493
34	33,4835	5,9040	64	63,0277	11,1135	94	92,5719	16,3229
35	34,4683	6,0777	65	64,0125	11,2871	95	93,5567	16,4966
36	35,4531	6,2513	66	64,9973	11,4608	96	94,5415	16,6702
37	36,4379	6,4250	67	65,9821	11,6344	97	95,5264	16,8439
38	37,4227	6,5986	68	66,9669	11,8081	98	96,5112	17,0175
39	38,4075	6,7723	69	67,9517	11,9817	99	97,4960	17,1912
R	y	x	R	y	x	R	y	x

80°

10° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,8325	1,8224	40	39,3302	7,2894	70	68,8278	12,7565
11	10,8158	2,0046	41	40,3135	7,4717	71	69,8111	12,9387
12	11,7991	2,1868	42	41,2967	7,6539	72	70,7944	13,1210
13	12,7823	2,3691	43	42,2800	7,8361	73	71,7776	13,3032
14	13,7656	2,5513	44	43,2632	8,0184	74	72,7609	13,4854
15	14,7488	2,7335	45	44,2465	8,2006	75	73,7441	13,6677
16	15,7321	2,9158	46	45,2297	8,3828	76	74,7274	13,8499
17	16,7153	3,0980	47	46,2130	8,5651	77	75,7106	14,0321
18	17,6986	3,2802	48	47,1962	8,7473	78	76,6939	14,2144
19	18,6818	3,4625	49	48,1795	8,9295	79	77,6771	14,3966
20	19,6651	3,6447	50	49,1627	9,1118	80	78,6604	14,5788
21	20,6484	3,8269	51	50,1460	9,2940	81	79,6436	14,7611
22	21,6316	4,0092	52	51,1293	9,4762	82	80,6269	14,9433
23	22,6149	4,1914	53	52,1125	9,6585	83	81,6102	15,1255
24	23,5981	4,3737	54	53,0958	9,8407	84	82,5934	15,3078
25	24,5814	4,5559	55	54,0790	10,0230	85	83,5767	15,4900
26	25,5646	4,7381	56	55,0623	10,2052	86	84,5599	15,6723
27	26,5479	4,9204	57	56,0455	10,3874	87	85,5432	15,8545
28	27,5311	5,1026	58	57,0288	10,5697	88	86,5264	16,0367
29	28,5144	5,2848	59	58,0120	10,7519	89	87,5097	16,2190
30	29,4976	5,4671	60	58,9953	10,9341	90	88,4929	16,4012
31	30,4809	5,6493	61	59,9785	11,1164	91	89,4762	16,5834
32	31,4642	5,8315	62	60,9618	11,2986	92	90,4595	16,7657
33	32,4474	6,0138	63	61,9451	11,4808	93	91,4427	16,9479
34	33,4307	6,1960	64	62,9283	11,6631	94	92,4260	17,1301
35	34,4139	6,3782	65	63,9116	11,8453	95	93,4092	17,3124
36	35,3972	6,5605	66	64,8948	12,0275	96	94,3925	17,4946
37	36,3804	6,7427	67	65,8781	12,2098	97	95,3757	17,6768
38	37,3637	6,9250	68	66,8613	12,3920	98	96,3590	17,8591
39	38,3469	7,1072	69	67,8446	12,5743	99	97,3422	18,0413
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

79° 30′

11°

R	x	y	R	x	y	R	x	y
10	9,8163	1,9081	40	39,2651	7,6324	70	68,7139	13,3566
11	10,7979	2,0989	41	40,2467	7,8232	71	69,6955	13,5474
12	11,7795	2,2897	42	41,2283	8,0140	72	70,6772	13,7382
13	12,7612	2,4805	43	42,2100	8,2048	73	71,6588	13,9291
14	13,7428	2,6713	44	43,1916	8,3956	74	72,6404	14,1199
15	14,7244	2,8621	45	44,1732	8,5864	75	73,6220	14,3107
16	15,7060	3,0529	46	45,1549	8,7772	76	74,6037	14,5015
17	16,6877	3,2438	47	46,1365	8,9680	77	75,5853	14,6923
18	17,6693	3,4346	48	47,1181	9,1588	78	76,5669	14,8831
19	18,6509	3,6254	49	48,0997	9,3496	79	77,5485	15,0739
20	19,6325	3,8162	50	49,0814	9,5405	80	78,5302	15,2647
21	20,6142	4,0070	51	50,0630	9,7313	81	79,5118	15,4555
22	21,5958	4,1978	52	51,0446	9,9221	82	80,4934	15,6463
23	22,5774	4,3886	53	52,0262	10,1129	83	81,4751	15,8371
24	23,5591	4,5794	54	53,0079	10,3037	84	82,4567	16,0280
25	24,5407	4,7702	55	53,9895	10,4945	85	83,4383	16,2188
26	25,5223	4,9610	56	54,9711	10,6853	86	84,4199	16,4096
27	26,5039	5,1518	57	55,9527	10,8761	87	85,4016	16,6004
28	27,4856	5,3427	58	56,9344	11,0669	88	86,3832	16,7912
29	28,4672	5,5335	59	57,9160	11,2577	89	87,3648	16,9820
30	29,4488	5,7243	60	58,8976	11,4485	90	88,3464	17,1728
31	30,4304	5,9151	61	59,8793	11,6393	91	89,3281	17,3636
32	31,4121	6,1059	62	60,8609	11,8302	92	90,3097	17,5544
33	32,3937	6,2967	63	61,8425	12,0210	93	91,2913	17,7452
34	33,3753	6,4875	64	62,8241	12,2118	94	92,2730	17,9360
35	34,3570	6,6783	65	63,8058	12,4026	95	93,2546	18,1269
36	35,3386	6,8691	66	64,7874	12,5934	96	94,2362	18,3177
37	36,3202	7,0599	67	65,7690	12,7842	97	95,2178	18,5085
38	37,3018	7,2507	68	66,7506	12,9750	98	96,1995	18,6993
39	38,2835	7,4416	69	67,7323	13,1658	99	97,1811	18,8901
R	y	x	R	y	x	R	y	x

79°

11° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,7992	1,9937	40	39,1970	7,9747	70	68,5947	13,9558
11	10,7792	2,1930	41	40,1769	8,1741	71	69,5747	14,1551
12	11,7591	2,3924	42	41,1568	8,3735	72	70,5546	14,3545
13	12,7390	2,5918	43	42,1368	8,5728	73	71,5345	14,5539
14	13,7189	2,7912	44	43,1167	8,7722	74	72,5144	14,7532
15	14,6989	2,9905	45	44,0966	8,9716	75	73,4944	14,9526
16	15,6788	3,1899	46	45,0765	9,1709	76	74,4743	15,1520
17	16,6587	3,3893	47	46,0565	9,3703	77	75,4542	15,3513
18	17,6386	3,5886	48	47,0364	9,5697	78	76,4341	15,5507
19	18,6186	3,7880	49	48,0163	9,7690	79	77,4141	15,7501
20	19,5985	3,9874	50	48,9962	9,9684	80	78,3940	15,9494
21	20,5784	4,1867	51	49,9762	10,1678	81	79,3739	16,1488
22	21,5583	4,3861	52	50,9561	10,3671	82	80,3538	16,3482
23	22,5383	4,5855	53	51,9360	10,5665	83	81,3338	16,5475
24	23,5182	4,7848	54	52,9159	10,7659	84	82,3137	16,7469
25	24,4981	4,9842	55	53,8959	10,9652	85	83,2936	16,9463
26	25,4780	5,1836	56	54,8758	11,1646	86	84,2735	17,1456
27	26,4580	5,3829	57	55,8557	11,3640	87	85,2534	17,3450
28	27,4379	5,5823	58	56,8356	11,5633	88	86,2334	17,5444
29	28,4178	5,7817	59	57,8156	11,7627	89	87,2133	17,7437
30	29,3977	5,9810	60	58,7955	11,9621	90	88,1932	17,9431
31	30,3777	6,1804	61	59,7754	12,1614	91	89,1731	18,1425
32	31,3576	6,3798	62	60,7553	12,3608	92	90,1531	18,3418
33	32,3375	6,5791	63	61,7353	12,5602	93	91,1330	18,5412
34	33,3174	6,7785	64	62,7152	12,7595	94	92,1129	18,7406
35	34,2974	6,9779	65	63,6951	12,9589	95	93,0928	18,9400
36	35,2773	7,1772	66	64,6750	13,1583	96	94,0728	19,1393
37	36,2572	7,3766	67	65,6550	13,3577	97	95,0527	19,3387
38	37,2371	7,5760	68	66,6349	13,5570	98	96,0326	19,5381
39	38,2171	7,7753	69	67,6148	13,7564	99	97,0125	19,7374
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

78° 30′

12°

R	x	y	R	x	y	R	x	y
10	9,7815	2,0791	40	39,1259	8,3165	70	68,4703	14,5538
11	10,7596	2,2870	41	40,1041	8,5244	71	69,4485	14,7617
12	11,7378	2,4949	42	41,0822	8,7323	72	70,4266	14,9696
13	12,7159	2,7029	43	42,0603	8,9402	73	71,4048	15,1776
14	13,6941	2,9108	44	43,0385	9,1481	74	72,3829	15,3855
15	14,6722	3,1187	45	44,0166	9,3560	75	73,3611	15,5934
16	15,6504	3,3266	46	44,9948	9,5639	76	74,3392	15,8013
17	16,6285	3,5345	47	45,9729	9,7718	77	75,3174	16,0092
18	17,6067	3,7424	48	46,9511	9,9798	78	76,2955	16,2171
19	18,5848	3,9503	49	47,9292	10,1877	79	77,2737	16,4250
20	19,5630	4,1582	50	48,9074	10,3956	80	78,2518	16,6329
21	20,5411	4,3661	51	49,8855	10,6035	81	79,2300	16,8408
22	21,5192	4,5741	52	50,8637	10,8114	82	80,2081	17,0488
23	22,4974	4,7820	53	51,8418	11,0193	83	81,1863	17,2567
24	23,4755	4,9899	54	52,8200	11,2272	84	82,1644	17,4646
25	24,4537	5,1978	55	53,7981	11,4351	85	83,1425	17,6725
26	25,4318	5,4057	56	54,7763	11,6431	86	84,1207	17,8804
27	26,4100	5,6136	57	55,7544	11,8510	87	85,0988	18,0883
28	27,3881	5,8215	58	56,7326	12,0589	88	86,0770	18,2962
29	28,3663	6,0294	59	57,7107	12,2668	89	87,0551	18,5041
30	29,3444	6,2374	60	58,6889	12,4747	90	88,0333	18,7121
31	30,3226	6,4453	61	59,6670	12,6826	91	89,0114	18,9200
32	31,3007	6,6532	62	60,6452	12,8905	92	89,9896	19,1279
33	32,2789	6,8611	63	61,6233	13,0984	93	90,9677	19,3358
34	33,2570	7,0690	64	62,6014	13,3063	94	91,9459	19,5437
35	34,2352	7,2769	65	63,5796	13,5143	95	92,9240	19,7516
36	35,2133	7,4848	66	64,5577	13,7222	96	93,9022	19,9595
37	36,1915	7,6927	67	65,5359	13,9301	97	94,8803	20,1674
38	37,1696	7,9006	68	66,5140	14,1380	98	95,8585	20,3753
39	38,1478	8,1086	69	67,4922	14,3459	99	96,8366	20,5833
R	y	x	R	y	x	R	y	x

78°

12° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,7630	2,1644	40	39,0518	8,6576	70	68,3407	15,1508
11	10,7393	2,3808	41	40,0281	8,8740	71	69,3170	15,3672
12	11,7156	2,5973	42	41,0044	9,0905	72	70,2933	15,5837
13	12,6918	2,8137	43	41,9807	9,3069	73	71,2696	15,8001
14	13,6681	3,0302	44	42,9570	9,5233	74	72,2459	16,0165
15	14,6444	3,2466	45	43,9333	9,7398	75	73,2222	16,2330
16	15,6207	3,4630	46	44,9096	9,9562	76	74,1985	16,4494
17	16,5970	3,6795	47	45,8859	10,1727	77	75,1748	16,6658
18	17,5733	3,8959	48	46,8622	10,3891	78	76,1511	16,8823
19	18,5496	4,1124	49	47,8385	10,6055	79	77,1274	17,0987
20	19,5259	4,3288	50	48,8148	10,8220	80	78,1037	17,3152
21	20,5022	4,5452	51	49,7911	11,0384	81	79,0800	17,5316
22	21,4785	4,7617	52	50,7674	11,2549	82	80,0563	17,7480
23	22,4548	4,9781	53	51,7437	11,4713	83	81,0326	17,9645
24	23,4311	5,1946	54	52,7200	11,6877	84	82,0089	18,1809
25	24,4074	5,4110	55	53,6963	11,9042	85	82,9852	18,3974
26	25,3837	5,6274	56	54,6726	12,1206	86	83,9615	18,6138
27	26,3600	5,8439	57	55,6489	12,3371	87	84,9378	18,8302
28	27,3363	6,0603	58	56,6252	12,5535	88	85,9140	19,0467
29	28,3126	6,2767	59	57,6015	12,7699	89	86,8903	19,2631
30	29,2889	6,4932	60	58,5778	12,9864	90	87,8666	19,4796
31	30,2652	6,7096	61	59,5541	13,2028	91	88,8429	19,6960
32	31,2415	6,9261	62	60,5304	13,4193	92	89,8192	19,9124
33	32,2178	7,1425	63	61,5066	13,6357	93	90,7955	20,1289
34	33,1941	7,3589	64	62,4829	13,8521	94	91,7718	20,3453
35	34,1704	7,5754	65	63,4592	14,0686	95	92,7481	20,5618
36	35,1467	7,7918	66	64,4355	14,2850	96	93,7244	20,7782
37	36,1230	8,0083	67	65,4118	14,5015	97	94,7007	20,9946
38	37,0992	8,2247	68	66,3881	14,7179	98	95,6770	21,2111
39	38,0755	8,4411	69	67,3644	14,9343	99	96,6533	21,4275
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

77° 30′

13°

R	x	y	R	x	y	R	x	y
10	9,7437	2,2495	40	38,9748	8,9980	70	68,2059	15,7466
11	10,7181	2,4745	41	39,9492	9,2230	71	69,1803	15,9715
12	11,6924	2,6994	42	40,9235	9,4479	72	70,1546	16,1965
13	12,6668	2,9244	43	41,8979	9,6729	73	71,1290	16,4214
14	13,6412	3,1493	44	42,8723	9,8978	74	72,1034	16,6464
15	14,6156	3,3743	45	43,8467	10,1228	75	73,0778	16,8713
16	15,5899	3,5992	46	44,8210	10,3477	76	74,0521	17,0963
17	16,5643	3,8242	47	45,7954	10,5727	77	75,0265	17,3212
18	17,5387	4,0491	48	46,7698	10,7977	78	76,0009	17,5462
19	18,5130	4,2741	49	47,7441	11,0226	79	76,9752	17,7711
20	19,4874	4,4990	50	48,7185	11,2476	80	77,9496	17,9961
21	20,4618	4,7240	51	49,6929	11,4725	81	78,9240	18,2210
22	21,4361	4,9489	52	50,6672	11,6975	82	79,8983	18,4460
23	22,4105	5,1739	53	51,6416	11,9224	83	80,8727	18,6709
24	23,3849	5,3988	54	52,6160	12,1474	84	81,8471	18,8959
25	24,3593	5,6238	55	53,5904	12,3723	85	82,8215	19,1208
26	25,3336	5,8487	56	54,5647	12,5973	86	83,7958	19,3458
27	26,3080	6,0737	57	55,5391	12,8222	87	84,7702	19,5707
28	27,2824	6,2986	58	56,5135	13,0472	88	85,7446	19,7957
29	28,2567	6,5236	59	57,4878	13,2721	89	86,7189	20,0206
30	29,2311	6,7485	60	58,4622	13,4971	90	87,6933	20,2456
31	30,2055	6,9735	61	59,4366	13,7220	91	88,6677	20,4705
32	31,1798	7,1984	62	60,4109	13,9470	92	89,6420	20,6955
33	32,1542	7,4234	63	61,3853	14,1719	93	90,6164	20,9204
34	33,1286	7,6483	64	62,3597	14,3969	94	91,5908	21,1454
35	34,1030	7,8733	65	63,3341	14,6218	95	92,5652	21,3703
36	35,0773	8,0982	66	64,3084	14,8468	96	93,5395	21,5953
37	36,0517	8,3232	67	65,2828	15,0717	97	94,5139	21,8203
38	37,0261	8,5481	68	66,2572	15,2967	98	95,4883	22,0452
39	38,0004	8,7731	69	67,2315	15,5216	99	96,4626	22,2702
R	y	x	R	y	x	R	y	x

77°

13° 30′

R	x	y	R	x	y	R	x	y
10	9,7237	2,3345	40	38,8948	9,3378	70	68,0659	16,3412
11	10,6961	2,5679	41	39,8672	9,5713	71	69,0383	16,5746
12	11,6684	2,8013	42	40,8395	9,8047	72	70,0106	16,8081
13	12,6408	3,0348	43	41,8119	10,0382	73	70,9830	17,0415
14	13,6132	3,2682	44	42,7843	10,2716	74	71,9554	17,2750
15	14,5855	3,5017	45	43,7566	10,5050	75	72,9277	17,5084
16	15,5579	3,7351	46	44,7290	10,7385	76	73,9001	17,7418
17	16,5303	3,9686	47	45,7014	10,9719	77	74,8725	17,9753
18	17,5027	4,2020	48	46,6738	11,2054	78	75,8449	18,2087
19	18,4750	4,4355	49	47,6461	11,4388	79	76,8172	18,4422
20	19,4474	4,6689	50	48,6185	11,6723	80	77,7896	18,6756
21	20,4198	4,9024	51	49,5909	11,9057	81	78,7620	18,9091
22	21,3921	5,1358	52	50,5632	12,1392	82	79,7343	19,1425
23	22,3645	5,3692	53	51,5356	12,3726	83	80,7067	19,3760
24	23,3369	5,6027	54	52,5080	12,6060	84	81,6791	19,6094
25	24,3092	5,8361	55	53,4803	12,8395	85	82,6514	19,8429
26	25,2816	6,0696	56	54,4527	13,0729	86	83,6238	20,0763
27	26,2540	6,3030	57	55,4251	13,3064	87	84,5962	20,3097
28	27,2264	6,5365	58	56,3975	13,5398	88	85,5686	20,5432
29	28,1987	6,7699	59	57,3698	13,7733	89	86,5409	20,7766
30	29,1711	7,0034	60	58,3422	14,0067	90	87,5133	21,0101
31	30,1435	7,2368	61	59,3146	14,2402	91	88,4857	21,2435
32	31,1158	7,4703	62	60,2869	14,4736	92	89,4580	21,4770
33	32,0882	7,7037	63	61,2593	14,7071	93	90,4304	21,7104
34	33,0606	7,9371	64	62,2317	14,9405	94	91,4028	21,9439
35	34,0329	8,1706	65	63,2040	15,1739	95	92,3751	22,1773
36	35,0053	8,4040	66	64,1764	15,4074	96	93,3475	22,4108
37	35,9777	8,6375	67	65,1488	15,6408	97	94,3199	22,6442
38	36,9501	8,8709	68	66,1212	15,8743	98	95,2923	22,8776
39	37,9224	9,1044	69	67,0935	16,1077	99	96,2646	23,1111
R	y	x	R	y	x	R	y	x

76° 30′

14°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,7030	2,4192	40	38,8118	9,6769	70	67,9207	16,9345
11	10,6733	2,6611	41	39,7821	9,9188	71	68,8910	17,1765
12	11,6435	2,9031	42	40,7524	10,1607	72	69,8613	17,4184
13	12,6138	3,1450	43	41,7227	10,4026	73	70,8316	17,6603
14	13,5841	3,3869	44	42,6930	10,6446	74	71,8019	17,9022
15	14,5544	3,6288	45	43,6633	10,8865	75	72,7722	18,1441
16	15,5247	3,8708	46	44,6336	11,1284	76	73,7425	18,3861
17	16,4950	4,1127	47	45,6039	11,3703	77	74,7128	18,6280
18	17,4653	4,3546	48	46,5742	11,6123	78	75,6831	18,8699
19	18,4356	4,5965	49	47,5445	11,8542	79	76,6534	19,1118
20	19,4059	4,8384	50	48,5148	12,0961	80	77,6237	19,3538
21	20,3762	5,0804	51	49,4851	12,3380	81	78,5940	19,5957
22	21,3465	5,3223	52	50,4554	12,5799	82	79,5642	19,8376
23	22,3168	5,5642	53	51,4257	12,8219	83	80,5345	20,0795
24	23,2871	5,8061	54	52,3960	13,0638	84	81,5048	20,3214
25	24,2574	6,0480	55	53,3663	13,3057	85	82,4751	20,5634
26	25,2277	6,2900	56	54,3366	13,5476	86	83,4454	20,8053
27	26,1980	6,5319	57	55,3069	13,7895	87	84,4157	21,0472
28	27,1683	6,7738	58	56,2772	14,0315	88	85,3860	21,2891
29	28,1386	7,0157	59	57,2474	14,2734	89	86,3563	21,5310
30	29,1089	7,2577	60	58,2177	14,5153	90	87,3266	21,7730
31	30,0792	7,4996	61	59,1880	14,7572	91	88,2969	22,0149
32	31,0495	7,7415	62	60,1583	14,9992	92	89,2672	22,2568
33	32,0198	7,9834	63	61,1286	15,2411	93	90,2375	22,4987
34	32,9901	8,2253	64	62,0989	15,4830	94	91,2078	22,7407
35	33,9604	8,4673	65	63,0692	15,7249	95	92,1781	22,9826
36	34,9306	8,7092	66	64,0395	15,9668	96	93,1484	23,2245
37	35,9009	8,9511	67	65,0098	16,2088	97	94,1187	23,4664
38	36,8712	9,1930	68	65,9801	16,4507	98	95,0890	23,7083
39	37,8415	9,4350	69	66,9504	16,6926	99	96,0593	23,9503
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

76°

14° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,6815	2,5038	40	38,7259	10,0152	70	67,7703	17,5266
11	10,6496	2,7542	41	39,6941	10,2656	71	68,7385	17,7770
12	11,6178	3,0046	42	40,6622	10,5160	72	69,7066	18,0274
13	12,5859	3,2549	43	41,6303	10,7663	73	70,6748	18,2777
14	13,5541	3,5053	44	42,5985	11,0167	74	71,6429	18,5281
15	14,5222	3,7557	45	43,5666	11,2671	75	72,6111	18,7785
16	15,4904	4,0061	46	44,5348	11,5175	76	73,5792	19,0289
17	16,4585	4,2565	47	45,5029	11,7679	77	74,5474	19,2793
18	17,4267	4,5068	48	46,4711	12,0182	78	75,5155	19,5296
19	18,3948	4,7572	49	47,4392	12,2686	79	76,4837	19,7800
20	19,3630	5,0076	50	48,4074	12,5190	80	77,4518	20,0304
21	20,3311	5,2580	51	49,3755	12,7694	81	78,4200	20,2808
22	21,2992	5,5084	52	50,3437	13,0198	82	79,3881	20,5312
23	22,2674	5,7587	53	51,3118	13,2701	83	80,3563	20,7815
24	23,2355	6,0091	54	52,2800	13,5205	84	81,3244	21,0319
25	24,2037	6,2595	55	53,2481	13,7709	85	82,2925	21,2823
26	25,1718	6,5099	56	54,2163	14,0213	86	83,2607	21,5327
27	26,1400	6,7603	57	55,1844	14,2717	87	84,2288	21,7831
28	27,1081	7,0106	58	56,1526	14,5220	88	85,1970	22,0334
29	28,0763	7,2610	59	57,1207	14,7724	89	86,1651	22,2838
30	29,0444	7,5114	60	58,0889	15,0228	90	87,1333	22,5342
31	30,0126	7,7618	61	59,0570	15,2732	91	88,1014	22,7846
32	30,9807	8,0122	62	60,0252	15,5236	92	89,0696	23,0350
33	31,9489	8,2625	63	60,9933	15,7739	93	90,0377	23,2853
34	32,9170	8,5129	64	61,9614	16,0243	94	91,0059	23,5357
35	33,8852	8,7633	65	62,9296	16,2747	95	91,9740	23,7861
36	34,8533	9,0137	66	63,8977	16,5251	96	92,9422	24,0365
37	35,8215	9,2641	67	64,8659	16,7755	97	93,9103	24,2869
38	36,7896	9,5144	68	65,8340	17,0258	98	94,8785	24,5372
39	37,7578	9,7648	69	66,8022	17,2762	99	95,8466	24,7876
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

75° 30′

15°

R	x	y	R	x	y	R	x	y
10	9,6593	2,5882	40	38,6370	10,3528	70	67,6148	18,1173
11	10,6252	2,8470	41	39,6030	10,6116	71	68,5807	18,3762
12	11,5911	3,1058	42	40,5689	10,8704	72	69,5467	18,6350
13	12,5570	3,3646	43	41,5348	11,1292	73	70,5126	18,8938
14	13,5230	3,6235	44	42,5007	11,3880	74	71,4785	19,1526
15	14,4889	3,8823	45	43,4667	11,6469	75	72,4444	19,4114
16	15,4548	4,1411	46	44,4326	11,9057	76	73,4104	19,6702
17	16,4207	4,3999	47	45,3985	12,1645	77	74,3763	19,9291
18	17,3867	4,6587	48	46,3644	12,4233	78	75,3422	20,1879
19	18,3526	4,9176	49	47,3304	12,6821	79	76,3081	20,4467
20	19,3185	5,1764	50	48,2963	12,9410	80	77,2741	20,7055
21	20,2844	5,4352	51	49,2622	13,1998	81	78,2400	20,9643
22	21,2504	5,6940	52	50,2281	13,4586	82	79,2059	21,2232
23	22,2163	5,9528	53	51,1941	13,7174	83	80,1718	21,4820
24	23,1822	6,2117	54	52,1600	13,9762	84	81,1378	21,7408
25	24,1481	6,4705	55	53,1259	14,2350	85	82,1037	21,9996
26	25,1141	6,7293	56	54,0918	14,4939	86	83,0696	22,2584
27	26,0800	6,9881	57	55,0578	14,7527	87	84,0355	22,5173
28	27,0459	7,2469	58	56,0237	15,0115	88	85,0015	22,7761
29	28,0118	7,5058	59	56,9896	15,2703	89	85,9674	23,0349
30	28,9778	7,7646	60	57,9555	15,5291	90	86,9333	23,2937
31	29,9437	8,0234	61	58,9215	15,7880	91	87,8993	23,5525
32	30,9096	8,2822	62	59,8874	16,0468	92	88,8652	23,8114
33	31,8756	8,5410	63	60,8533	16,3056	93	89,8311	24,0702
34	32,8415	8,7998	64	61,8193	16,5644	94	90,7970	24,3290
35	33,8074	9,0587	65	62,7852	16,8232	95	91,7630	24,5878
36	34,7733	9,3175	66	63,7511	17,0821	96	92,7289	24,8466
37	35,7393	9,5763	67	64,7170	17,3409	97	93,6948	25,1054
38	36,7052	9,8351	68	65,6830	17,5997	98	94,6607	25,3643
39	37,6711	10,0939	69	66,6489	17,8585	99	95,6267	25,6231
R	y	x	R	y	x	R	y	x

75°

15° 30′

R	x	y	R	x	y	R	x	y
10	9,6363	2,6724	40	38,5452	10,6895	70	67,4541	18,7067
11	10,5999	2,9396	41	39,5088	10,9568	71	68,4178	18,9739
12	11,5636	3,2069	42	40,4725	11,2240	72	69,3814	19,2412
13	12,5272	3,4741	43	41,4361	11,4913	73	70,3450	19,5084
14	13,4908	3,7413	44	42,3997	11,7585	74	71,3087	19,7756
15	14,4545	4,0086	45	43,3634	12,0257	75	72,2723	20,0429
16	15,4181	4,2758	46	44,3270	12,2930	76	73,2359	20,3101
17	16,3817	4,5431	47	45,2906	12,5602	77	74,1995	20,5774
18	17,3453	4,8103	48	46,2543	12,8274	78	75,1632	20,8446
19	18,3090	5,0775	49	47,2179	13,0947	79	76,1268	21,1118
20	19,2726	5,3448	50	48,1815	13,3619	80	77,0904	21,3791
21	20,2362	5,6120	51	49,1452	13,6292	81	78,0541	21,6463
22	21,1999	5,8792	52	50,1088	13,8964	82	79,0177	21,9135
23	22,1635	6,1465	53	51,0724	14,1636	83	79,9813	22,1808
24	23,1271	6,4137	54	52,0360	14,4309	84	80,9450	22,4480
25	24,0908	6,6810	55	52,9997	14,6981	85	81,9086	22,7153
26	25,0544	6,9482	56	53,9633	14,9653	86	82,8722	22,9825
27	26,0180	7,2154	57	54,9269	15,2326	87	83,8358	23,2497
28	26,9817	7,4827	58	55,8906	15,4998	88	84,7995	23,5170
29	27,9453	7,7499	59	56,8542	15,7671	89	85,7631	23,7842
30	28,9089	8,0172	60	57,8178	16,0343	90	86,7267	24,0515
31	29,8725	8,2844	61	58,7815	16,3015	91	87,6904	24,3187
32	30,8362	8,5516	62	59,7451	16,5688	92	88,6540	24,5859
33	31,7998	8,8189	63	60,7087	16,8360	93	89,6176	24,8532
34	32,7634	9,0861	64	61,6723	17,1033	94	90,5813	25,1204
35	33,7271	9,3533	65	62,6360	17,3705	95	91,5449	25,3876
36	34,6907	9,6206	66	63,5996	17,6377	96	92,5085	25,6549
37	35,6543	9,8878	67	64,5632	17,9050	97	93,4722	25,9221
38	36,6180	10,1551	68	65,5269	18,1722	98	94,4358	26,1894
39	37,5816	10,4223	69	66,4905	18,4394	99	95,3994	26,4566
R	y	x	R	y	x	R	y	x

74° 30′

16°

R	x	y	R	x	y	R	x	y
10	9,6126	2,7564	40	38,4505	11,0255	70	67,2883	19,2946
11	10,5739	3,0320	41	39,4117	11,3011	71	68,2496	19,5703
12	11,5351	3,3076	42	40,3730	11,5768	72	69,2108	19,8459
13	12,4964	3,5833	43	41,3343	11,8524	73	70,1721	20,1215
14	13,4577	3,8589	44	42,2955	12,1280	74	71,1334	20,3972
15	14,4189	4,1346	45	43,2568	12,4037	75	72,0946	20,6728
16	15,3802	4,4102	46	44,2180	12,6793	76	73,0559	20,9484
17	16,3414	4,6858	47	45,1793	12,9550	77	74,0172	21,2241
18	17,3027	4,9615	48	46,1406	13,2306	78	74,9784	21,4997
19	18,2640	5,2371	49	47,1018	13,5062	79	75,9397	21,7754
20	19,2252	5,5127	50	48,0631	13,7819	80	76,9009	22,0510
21	20,1865	5,7884	51	49,0243	14,0575	81	77,8622	22,3266
22	21,1478	6,0640	52	49,9856	14,3331	82	78,8235	22,6023
23	22,1090	6,3397	53	50,9469	14,6088	83	79,7847	22,8779
24	23,0703	6,6153	54	51,9081	14,8844	84	80,7460	23,1535
25	24,0315	6,8909	55	52,8694	15,1601	85	81,7072	23,4292
26	24,9928	7,1666	56	53,8307	15,4357	86	82,6685	23,7048
27	25,9541	7,4422	57	54,7919	15,7113	87	83,6298	23,9805
28	26,9153	7,7178	58	55,7532	15,9870	88	84,5910	24,2561
29	27,8766	7,9935	59	56,7144	16,2626	89	85,5523	24,5317
30	28,8379	8,2691	60	57,6757	16,5382	90	86,5136	24,8074
31	29,7991	8,5448	61	58,6370	16,8139	91	87,4748	25,0830
32	30,7604	8,8204	62	59,5982	17,0895	92	88,4361	25,3586
33	31,7216	9,0960	63	60,5595	17,3652	93	89,3973	25,6343
34	32,6829	9,3717	64	61,5207	17,6408	94	90,3586	25,9099
35	33,6442	9,6473	65	62,4820	17,9164	95	91,3199	26,1855
36	34,6054	9,9229	66	63,4433	18,1921	96	92,2811	26,4612
37	35,5667	10,1986	67	64,4045	18,4677	97	93,2424	26,7368
38	36,5279	10,4742	68	65,3658	18,7433	98	94,2036	27,0125
39	37,4892	10,7499	69	66,3271	19,0190	99	95,1649	27,2881
R	y	x	R	y	x	R	y	x

74°

16° 30′

R	x	y	R	x	y	R	x	y
10	9,5882	2,8402	40	38,3528	11,3606	70	67,1174	19,8811
11	10,5470	3,1242	41	39,3116	11,6446	71	68,0762	20,1651
12	11,5058	3,4082	42	40,2704	11,9286	72	69,0350	20,4491
13	12,4647	3,6922	43	41,2292	12,2127	73	69,9938	20,7331
14	13,4235	3,9762	44	42,1881	12,4967	74	70,9527	21,0171
15	14,3823	4,2602	45	43,1469	12,7807	75	71,9115	21,3012
16	15,3411	4,5442	46	44,1057	13,0647	76	72,8703	21,5852
17	16,2999	4,8283	47	45,0645	13,3487	77	73,8291	21,8692
18	17,2588	5,1123	48	46,0233	13,6327	78	74,7879	22,1532
19	18,2176	5,3963	49	46,9822	13,9168	79	75,7468	22,4372
20	19,1764	5,6803	50	47,9410	14,2008	80	76,7056	22,7212
21	20,1352	5,9643	51	48,8998	14,4848	81	77,6644	23,0052
22	21,0940	6,2483	52	49,8586	14,7688	82	78,6232	23,2893
23	22,0529	6,5324	53	50,8174	15,0528	83	79,5820	23,5733
24	23,0117	6,8164	54	51,7763	15,3368	84	80,5409	23,8573
25	23,9705	7,1004	55	52,7351	15,6208	85	81,4997	24,1413
26	24,9293	7,3844	56	53,6939	15,9049	86	82,4585	24,4253
27	25,8881	7,6684	57	54,6527	16,1889	87	83,4173	24,7093
28	26,8470	7,9524	58	55,6115	16,4729	88	84,3761	24,9933
29	27,8058	8,2364	59	56,5704	16,7569	89	85,3350	25,2774
30	28,7646	8,5205	60	57,5292	17,0409	90	86,2938	25,5614
31	29,7234	8,8045	61	58,4880	17,3249	91	87,2526	25,8454
32	30,6822	9,0885	62	59,4468	17,6090	92	88,2114	26,1294
33	31,6411	9,3725	63	60,4056	17,8930	93	89,1702	26,4134
34	32,5999	9,6565	64	61,3645	18,1770	94	90,1291	26,6974
35	33,5587	9,9405	65	62,3233	18,4610	95	91,0879	26,9815
36	34,5175	10,2246	66	63,2821	18,7450	96	92,0467	27,2655
37	35,4763	10,5086	67	64,2409	19,0290	97	93,0055	27,5495
38	36,4351	10,7926	68	65,1997	19,3130	98	93,9643	27,8335
39	37,3940	11,0766	69	66,1586	19,5971	99	94,9232	28,1175
R	y	x	R	y	x	R	y	x

73° 30′

17°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,5630	2,9237	40	38,2522	11,6949	70	66,9413	20,4660
11	10,5194	3,2161	41	39,2085	11,9872	71	67,8976	20,7584
12	11,4757	3,5085	42	40,1648	12,2796	72	68,8539	21,0508
13	12,4320	3,8008	43	41,1211	12,5720	73	69,8102	21,3431
14	13,3883	4,0932	44	42,0774	12,8644	74	70,7666	21,6355
15	14,3446	4,3856	45	43,0337	13,1567	75	71,7229	21,9279
16	15,3009	4,6779	46	43,9900	13,4491	76	72,6792	22,2202
17	16,2572	4,9703	47	44,9463	13,7415	77	73,6355	22,5126
18	17,2135	5,2627	48	45,9026	14,0338	78	74,5918	22,8050
19	18,1698	5,5551	49	46,8589	14,3262	79	75,5481	23,0974
20	19,1261	5,8474	50	47,8152	14,6186	80	76,5044	23,3897
21	20,0824	6,1398	51	48,7715	14,9110	81	77,4607	23,6821
22	21,0387	6,4322	52	49,7278	15,2033	82	78,4170	23,9745
23	21,9950	6,7245	53	50,6842	15,4957	83	79,3733	24,2669
24	22,9513	7,0169	54	51,6405	15,7881	84	80,3296	24,5592
25	23,9076	7,3093	55	52,5968	16,0804	85	81,2859	24,8516
26	24,8639	7,6017	56	53,5531	16,3728	86	82,2422	25,1440
27	25,8202	7,8940	57	54,5094	16,6652	87	83,1985	25,4363
28	26,7765	8,1864	58	55,4657	16,9576	88	84,1548	25,7287
29	27,7328	8,4788	59	56,4220	17,2499	89	85,1111	26,0211
30	28,6891	8,7712	60	57,3783	17,5423	90	86,0674	26,3135
31	29,6454	9,0635	61	58,3346	17,8347	91	87,0237	26,6058
32	30,6018	9,3559	62	59,2909	18,1270	92	87,9800	26,8982
33	31,5581	9,6483	63	60,2472	18,4194	93	88,9363	27,1906
34	32,5144	9,9406	64	61,2035	18,7118	94	89,8926	27,4829
35	33,4707	10,2330	65	62,1598	19,0042	95	90,8490	27,7753
36	34,4270	10,5254	66	63,1161	19,2965	96	91,8053	28,0677
37	35,3833	10,8178	67	64,0724	19,5889	97	92,7616	28,3601
38	36,3396	11,1101	68	65,0287	19,8813	98	93,7179	28,6524
39	37,2959	11,4025	69	65,9850	20,1736	99	94,6742	28,9448
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

73°

17° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,5372	3,0071	40	38,1487	12,0282	70	66,7602	21,0494
11	10,4909	3,3078	41	39,1024	12,3289	71	67,7139	21,3501
12	11,4446	3,6085	42	40,0561	12,6296	72	68,6676	21,6508
13	12,3983	3,9092	43	41,0098	12,9303	73	69,6213	21,9515
14	13,3520	4,2099	44	41,9635	13,2311	74	70,5751	22,2522
15	14,3058	4,5106	45	42,9173	13,5318	75	71,5288	22,5529
16	15,2595	4,8113	46	43,8710	13,8325	76	72,4825	22,8536
17	16,2132	5,1120	47	44,8247	14,1332	77	73,4362	23,1543
18	17,1669	5,4127	48	45,7784	14,4339	78	74,3899	23,4551
19	18,1206	5,7134	49	46,7321	14,7346	79	75,3436	23,7558
20	19,0743	6,0141	50	47,6858	15,0353	80	76,2974	24,0565
21	20,0281	6,3148	51	48,6396	15,3360	81	77,2511	24,3572
22	20,9818	6,6155	52	49,5933	15,6367	82	78,2048	24,6579
23	21,9355	6,9162	53	50,5470	15,9374	83	79,1585	24,9586
24	22,8892	7,2169	54	51,5007	16,2381	84	80,1122	25,2593
25	23,8429	7,5176	55	52,4544	16,5388	85	81,0659	25,5600
26	24,7966	7,8184	56	53,4081	16,8395	86	82,0197	25,8607
27	25,7504	8,1191	57	54,3619	17,1402	87	82,9734	26,1614
28	26,7041	8,4198	58	55,3156	17,4409	88	83,9271	26,4621
29	27,6578	8,7205	59	56,2693	17,7416	89	84,8808	26,7628
30	28,6115	9,0212	60	57,2230	18,0423	90	85,8345	27,0635
31	29,5652	9,3219	61	58,1767	18,3431	91	86,7882	27,3642
32	30,5189	9,6226	62	59,1305	18,6438	92	87,7420	27,6649
33	31,4727	9,9233	63	60,0842	18,9445	93	88,6957	27,9656
34	32,4264	10,2240	64	61,0379	19,2452	94	89,6494	28,2663
35	33,3801	10,5247	65	61,9916	19,5459	95	90,6031	28,5671
36	34,3338	10,8254	66	62,9453	19,8466	96	91,5568	28,8678
37	35,2875	11,1261	67	63,8990	20,1473	97	92,5105	29,1685
38	36,2412	11,4268	68	64,8528	20,4480	98	93,4643	29,4692
39	37,1950	11,7275	69	65,8065	20,7487	99	94,4180	29,7699
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

72°30′

18°

R	x	y	R	x	y	R	x	y
10	9,5106	3,0902	40	38,0423	12,3607	70	66,5740	21,6312
11	10,4616	3,3992	41	38,9933	12,6697	71	67,5250	21,9402
12	11,4127	3,7082	42	39,9444	12,9787	72	68,4761	22,2492
13	12,3637	4,0172	43	40,8954	13,2877	73	69,4271	22,5582
14	13,3148	4,3262	44	41,8465	13,5967	74	70,3782	22,8673
15	14,2658	4,6353	45	42,7975	13,9058	75	71,3292	23,1763
16	15,2169	4,9443	46	43,7486	14,2148	76	72,2803	23,4853
17	16,1680	5,2533	47	44,6997	14,5238	77	73,2314	23,7943
18	17,1190	5,5623	48	45,6507	14,8328	78	74,1824	24,1033
19	18,0701	5,8713	49	46,6018	15,1418	79	75,1335	24,4123
20	19,0211	6,1803	50	47,5528	15,4508	80	76,0845	24,7214
21	19,9722	6,4894	51	48,5039	15,7599	81	77,0356	25,0304
22	20,9232	6,7984	52	49,4549	16,0689	82	77,9866	25,3394
23	21,8743	7,1074	53	50,4060	16,3779	83	78,9377	25,6484
24	22,8254	7,4164	54	51,3571	16,6869	84	79,8887	25,9574
25	23,7764	7,7254	55	52,3081	16,9959	85	80,8398	26,2664
26	24,7275	8,0344	56	53,2592	17,3050	86	81,7909	26,5755
27	25,6785	8,3435	57	54,2102	17,6140	87	82,7419	26,8845
28	26,6296	8,6525	58	55,1613	17,9230	88	83,6930	27,1935
29	27,5806	8,9615	59	56,1123	18,2320	89	84,6440	27,5025
30	28,5317	9,2705	60	57,0634	18,5410	90	85,5951	27,8115
31	29,4828	9,5795	61	58,0144	18,8500	91	86,5461	28,1205
32	30,4338	9,8885	62	58,9655	19,1591	92	87,4972	28,4296
33	31,3849	10,1976	63	59,9166	19,4681	93	88,4483	28,7386
34	32,3359	10,5066	64	60,8676	19,7771	94	89,3993	29,0476
35	33,2870	10,8156	65	61,8187	20,0861	95	90,3504	29,3566
36	34,2380	11,1246	66	62,7697	20,3951	96	91,3014	29,6656
37	35,1891	11,4336	67	63,7208	20,7041	97	92,2525	29,9746
38	36,1401	11,7426	68	64,6718	21,0132	98	93,2035	30,2837
39	37,0912	12,0517	69	65,6229	21,3222	99	94,1546	30,5927
R	y	x	R	y	x	R	y	x

72°

18° 30′

R	x	y	R	x	y	R	x	y
10	9,4832	3,1730	40	37,9329	12,6922	70	66,3827	22,2113
11	10,4316	3,4904	41	38,8813	13,0095	71	67,3310	22,5286
12	11,3799	3,8077	42	39,8296	13,3268	72	68,2793	22,8459
13	12,3282	4,1250	43	40,7779	13,6441	73	69,2276	23,1632
14	13,2765	4,4423	44	41,7262	13,9614	74	70,1760	23,4805
15	14,2249	4,7596	45	42,6746	14,2787	75	71,1243	23,7978
16	15,1732	5,0769	46	43,6229	14,5960	76	72,0726	24,1152
17	16,1215	5,3942	47	44,5712	14,9133	77	73,0209	24,4325
18	17,0698	5,7115	48	45,5195	15,2306	78	73,9692	24,7498
19	18,0181	6,0288	49	46,4679	15,5479	79	74,9176	25,0671
20	18,9665	6,3461	50	47,4162	15,8652	80	75,8659	25,3844
21	19,9148	6,6634	51	48,3645	16,1825	81	76,8142	25,7017
22	20,8631	6,9807	52	49,3128	16,4998	82	77,7625	26,0190
23	21,8114	7,2980	53	50,2612	16,8171	83	78,7109	26,3363
24	22,7598	7,6153	54	51,2095	17,1345	84	79,6592	26,6536
25	23,7081	7,9326	55	52,1578	17,4518	85	80,6075	26,9709
26	24,6564	8,2499	56	53,1061	17,7691	86	81,5558	27,2882
27	25,6047	8,5672	57	54,0544	18,0864	87	82,5042	27,6055
28	26,5531	8,8845	58	55,0028	18,4037	88	83,4525	27,9228
29	27,5014	9,2018	59	55,9511	18,7210	89	84,4008	28,2401
30	28,4497	9,5191	60	56,8994	19,0383	90	85,3491	28,5574
31	29,3980	9,8364	61	57,8477	19,3556	91	86,2975	28,8747
32	30,3464	10,1537	62	58,7961	19,6729	92	87,2458	29,1920
33	31,2947	10,4711	63	59,7444	19,9902	93	88,1941	29,5093
34	32,2430	10,7884	64	60,6927	20,3075	94	89,1424	29,8266
35	33,1913	11,1057	65	61,6410	20,6248	95	90,0907	30,1439
36	34,1397	11,4230	66	62,5894	20,9421	96	91,0391	30,4612
37	35,0880	11,7403	67	63,5377	21,2594	97	91,9874	30,7786
38	36,0363	12,0576	68	64,4860	21,5767	98	92,9357	31,0959
39	36,9846	12,3749	69	65,4343	21,8940	99	93,8840	31,4132
R	y	x	R	y	x	R	y	x

71° 30′

19°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,4552	3,2557	40	37,8207	13,0227	70	66,1863	22,7898
11	10,4007	3,5812	41	38,7663	13,3483	71	67,1318	23,1153
12	11,3462	3,9068	42	39,7118	13,6739	72	68,0773	23,4409
13	12,2917	4,2324	43	40,6573	13,9994	73	69,0229	23,7665
14	13,2373	4,5580	44	41,6028	14,3250	74	69,9684	24,0920
15	14,1828	4,8835	45	42,5483	14,6506	75	70,9139	24,4176
16	15,1283	5,2091	46	43,4939	14,9761	76	71,8594	24,7432
17	16,0738	5,5347	47	44,4394	15,3017	77	72,8049	25,0687
18	17,0193	5,8602	48	45,3849	15,6273	78	73,7504	25,3943
19	17,9649	6,1858	49	46,3304	15,9528	79	74,6960	25,7199
20	18,9104	6,5114	50	47,2759	16,2784	80	75,6415	26,0455
21	19,8559	6,8369	51	48,2214	16,6040	81	76,5870	26,3710
22	20,8014	7,1625	52	49,1670	16,9295	82	77,5325	26,6966
23	21,7469	7,4881	53	50,1125	17,2551	83	78,4780	27,0222
24	22,6924	7,8136	54	51,0580	17,5807	84	79,4236	27,3477
25	23,6380	8,1392	55	52,0035	17,9062	85	80,3691	27,6733
26	24,5835	8,4648	56	52,9490	18,2318	86	81,3146	27,9989
27	25,5290	8,7903	57	53,8946	18,5574	87	82,2601	28,3244
28	26,4745	9,1159	58	54,8401	18,8830	88	83,2056	28,6500
29	27,4200	9,4415	59	55,7856	19,2085	89	84,1512	28,9756
30	28,3656	9,7670	60	56,7311	19,5341	90	85,0967	29,3011
31	29,3111	10,0926	61	57,6766	19,8597	91	86,0422	29,6267
32	30,2566	10,4182	62	58,6222	20,1852	92	86,9877	29,9523
33	31,2021	10,7437	63	59,5677	20,5108	93	87,9332	30,2778
34	32,1476	11,0693	64	60,5132	20,8364	94	88,8787	30,6034
35	33,0932	11,3949	65	61,4587	21,1619	95	89,8243	30,9290
36	34,0387	11,7205	66	62,4042	21,4875	96	90,7698	31,2545
37	34,9842	12,0460	67	63,3497	21,8131	97	91,7153	31,5801
38	35,9297	12,3716	68	64,2953	22,1386	98	92,6608	31,9057
39	36,8752	12,6972	69	65,2408	22,4642	99	93,6063	32,2312
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

71°

19° 30′

R	x	y	R	x	y	R	x	y
10	9,4264	3,3381	40	37,7057	13,3523	70	65,9849	23,3665
11	10,3691	3,6719	41	38,6483	13,6861	71	66,9275	23,7003
12	11,3117	4,0057	42	39,5909	14,0199	72	67,8702	24,0341
13	12,2543	4,3395	43	40,5336	14,3537	73	68,8128	24,3679
14	13,1970	4,6733	44	41,4762	14,6875	74	69,7555	24,7017
15	14,1396	5,0071	45	42,4189	15,0213	75	70,6981	25,0355
16	15,0823	5,3409	46	43,3615	15,3551	76	71,6408	25,3693
17	16,0249	5,6747	47	44,3042	15,6889	77	72,5834	25,7031
18	16,9675	6,0085	48	45,2468	16,0227	78	73,5260	26,0369
19	17,9102	6,3423	49	46,1894	16,3565	79	74,4687	26,3707
20	18,8528	6,6761	50	47,1321	16,6903	80	75,4113	26,7045
21	19,7955	7,0099	51	48,0747	17,0241	81	76,3540	27,0384
22	20,7381	7,3438	52	49,0174	17,3580	82	77,2966	27,3722
23	21,6808	7,6776	53	49,9600	17,6918	83	78,2392	27,7060
24	22,6234	8,0114	54	50,9026	18,0256	84	79,1819	28,0398
25	23,5660	8,3452	55	51,8453	18,3594	85	80,1245	28,3736
26	24,5087	8,6790	56	52,7879	18,6932	86	81,0672	28,7074
27	25,4513	9,0128	57	53,7306	19,0270	87	82,0098	29,0412
28	26,3940	9,3466	58	54,6732	19,3608	88	82,9525	29,3750
29	27,3366	9,6804	59	55,6158	19,6946	89	83,8951	29,7088
30	28,2792	10,0142	60	56,5585	20,0284	90	84,8377	30,0426
31	29,2219	10,3480	61	57,5011	20,3622	91	85,7804	30,3764
32	30,1645	10,6818	62	58,4438	20,6960	92	86,7230	30,7102
33	31,1072	11,0156	63	59,3864	21,0298	93	87,6657	31,0440
34	32,0498	11,3494	64	60,3291	21,3636	94	88,6083	31,3778
35	32,9925	11,6832	65	61,2717	21,6974	95	89,5509	31,7117
36	33,9351	12,0170	66	62,2143	22,0313	96	90,4936	32,0455
37	34,8777	12,3509	67	63,1570	22,3651	97	91,4362	32,3793
38	35,8204	12,6847	68	64,0996	22,6989	98	92,3789	32,7131
39	36,7630	13,0185	69	65,0423	23,0327	99	93,3215	33,0469
R	y	x	R	y	x	R	y	x

70° 30′

20°

R	x	y	R	x	y	R	x	y
10	9,3969	3,4202	40	37,5877	13,6808	70	65,7785	23,9414
11	10,3366	3,7622	41	38,5274	14,0228	71	66,7182	24,2834
12	11,2763	4,1042	42	39,4671	14,3648	72	67,6579	24,6255
13	12,2160	4,4463	43	40,4068	14,7069	73	68,5976	24,9675
14	13,1557	4,7883	44	41,3465	15,0489	74	69,5373	25,3095
15	14,0954	5,1303	45	42,2862	15,3909	75	70,4769	25,6515
16	15,0351	5,4723	46	43,2259	15,7329	76	71,4166	25,9935
17	15,9748	5,8143	47	44,1656	16,0749	77	72,3563	26,3356
18	16,9145	6,1564	48	45,1052	16,4170	78	73,2960	26,6776
19	17,8542	6,4984	49	46,0449	16,7590	79	74,2357	27,0196
20	18,7939	6,8404	50	46,9846	17,1010	80	75,1754	27,3616
21	19,7335	7,1824	51	47,9243	17,4430	81	76,1151	27,7036
22	20,6732	7,5244	52	48,8640	17,7850	82	77,0548	28,0457
23	21,6129	7,8665	53	49,8037	18,1271	83	77,9945	28,3877
24	22,5526	8,2085	54	50,7434	18,4691	84	78,9342	28,7297
25	23,4923	8,5505	55	51,6831	18,8111	85	79,8739	29,0717
26	24,4320	8,8925	56	52,6228	19,1531	86	80,8136	29,4137
27	25,3717	9,2345	57	53,5625	19,4951	87	81,7533	29,7558
28	26,3114	9,5766	58	54,5022	19,8372	88	82,6930	30,0978
29	27,2511	9,9186	59	55,4419	20,1792	89	83,6326	30,4398
30	28,1908	10,2606	60	56,3816	20,5212	90	84,5723	30,7818
31	29,1305	10,6026	61	57,3212	20,8632	91	85,5120	31,1238
32	30,0702	10,9446	62	58,2609	21,2052	92	86,4517	31,4659
33	31,0099	11,2867	63	59,2006	21,5473	93	87,3914	31,8079
34	31,9495	11,6287	64	60,1403	21,8893	94	88,3311	32,1499
35	32,8892	11,9707	65	61,0800	22,2313	95	89,2708	32,4919
36	33,8289	12,3127	66	62,0197	22,5733	96	90,2105	32,8339
37	34,7686	12,6547	67	62,9594	22,9153	97	91,1502	33,1760
38	35,7083	12,9968	68	63,8991	23,2574	98	92,0899	33,5180
39	36,6480	13,3388	69	64,8388	23,5994	99	93,0296	33,8600
R	y	x	R	y	x	R	y	x

70°

20° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,3667	3,5021	40	37,4669	14,0083	70	65,5671	24,5145
11	10,3034	3,8523	41	38,4036	14,3585	71	66,5037	24,8647
12	11,2401	4,2025	42	39,3402	14,7087	72	67,4404	25,2149
13	12,1767	4,5527	43	40,2769	15,0589	73	68,3771	25,5651
14	13,1134	4,9029	44	41,2136	15,4091	74	69,3137	25,9153
15	14,0501	5,2531	45	42,1502	15,7593	75	70,2504	26,2656
16	14,9868	5,6033	46	43,0869	16,1095	76	71,1871	26,6158
17	15,9234	5,9535	47	44,0236	16,4597	77	72,1238	26,9660
18	16,8601	6,3037	48	44,9603	16,8100	78	73,0604	27,3162
19	17,7968	6,6539	49	45,8969	17,1602	79	73,9971	27,6664
20	18,7334	7,0041	50	46,8336	17,5104	80	74,9338	28,0166
21	19,6701	7,3544	51	47,7703	17,8606	81	75,8704	28,3668
22	20,6068	7,7046	52	48,7070	18,2108	82	76,8071	28,7170
23	21,5435	8,0548	53	49,6436	18,5610	83	77,7438	29,0672
24	22,4801	8,4050	54	50,5803	18,9112	84	78,6805	29,4174
25	23,4168	8,7552	55	51,5170	19,2614	85	79,6171	29,7676
26	24,3535	9,1054	56	52,4536	19,6116	86	80,5538	30,1178
27	25,2901	9,4556	57	53,3903	19,9618	87	81,4905	30,4680
28	26,2268	9,8058	58	54,3270	20,3120	88	82,4272	30,8182
29	27,1635	10,1560	59	55,2637	20,6622	89	83,3638	31,1685
30	28,1002	10,5062	60	56,2003	21,0124	90	84,3005	31,5187
31	29,0368	10,8564	61	57,1370	21,3627	91	85,2372	31,8689
32	29,9735	11,2066	62	58,0737	21,7129	92	86,1738	32,2191
33	30,9102	11,5568	63	59,0103	22,0631	93	87,1105	32,5693
34	31,8469	11,9071	64	59,9470	22,4133	94	88,0472	32,9195
35	32,7835	12,2573	65	60,8837	22,7635	95	88,9839	33,2697
36	33,7202	12,6075	66	61,8204	23,1137	96	89,9205	33,6199
37	34,6569	12,9577	67	62,7570	23,4639	97	90,8572	33,9701
38	35,5935	13,3079	68	63,6937	23,8141	98	91,7939	34,3203
39	36,5302	13,6581	69	64,6304	24,1643	99	92,7305	34,6705
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

69° 30′

21°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,3358	3,5837	40	37,3432	14,3347	70	65,3506	25,0858
11	10,2694	3,9420	41	38,2768	14,6931	71	66,2842	25,4441
12	11,2030	4,3004	42	39,2104	15,0515	72	67,2178	25,8025
13	12,1365	4,6588	43	40,1440	15,4098	73	68,1514	26,1609
14	13,0701	5,0172	44	41,0775	15,7682	74	69,0850	26,5192
15	14,0037	5,3755	45	42,0111	16,1266	75	70,0185	26,8776
16	14,9373	5,7339	46	42,9447	16,4849	76	70,9521	27,2360
17	15,8709	6,0923	47	43,8783	16,8433	77	71,8857	27,5943
18	16,8044	6,4506	48	44,8119	17,2017	78	72,8193	27,9527
19	17,7380	6,8090	49	45,7454	17,5600	79	73,7529	28,3111
20	18,6716	7,1674	50	46,6790	17,9184	80	74,6864	28,6694
21	19,6052	7,5257	51	47,6126	18,2768	81	75,6200	29,0278
22	20,5388	7,8841	52	48,5462	18,6351	82	76,5536	29,3862
23	21,4723	8,2425	53	49,4798	18,9935	83	77,4872	29,7445
24	22,4059	8,6008	54	50,4133	19,3519	84	78,4208	30,1029
25	23,3395	8,9592	55	51,3469	19,7102	85	79,3543	30,4613
26	24,2731	9,3176	56	52,2805	20,0686	86	80,2879	30,8196
27	25,2067	9,6759	57	53,2141	20,4270	87	81,2215	31,1780
28	26,1403	10,0343	58	54,1477	20,7853	88	82,1551	31,5364
29	27,0738	10,3927	59	55,0812	21,1437	89	83,0887	31,8947
30	28,0074	10,7510	60	56,0148	21,5021	90	84,0222	32,2531
31	28,9410	11,1094	61	56,9484	21,8604	91	84,9558	32,6115
32	29,8746	11,4678	62	57,8820	22,2188	92	85,8894	32,9699
33	30,8082	11,8261	63	58,8156	22,5772	93	86,8230	33,3282
34	31,7417	12,1845	64	59,7491	22,9355	94	87,7566	33,6866
35	32,6753	12,5429	65	60,6827	23,2939	95	88,6901	34,0450
36	33,6089	12,9012	66	61,6163	23,6523	96	89,6237	34,4033
37	34,5425	13,2596	67	62,5499	24,0107	97	90,5573	34,7617
38	35,4761	13,6180	68	63,4835	24,3690	98	91,4909	35,1201
39	36,4096	13,9764	69	64,4170	24,7274	99	92,4245	35,4784
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

69°

21° 30′

R	x	y	R	x	y	R	x	y
10	9,3042	3,6650	40	37,2167	14,6600	70	65,1292	25,6551
11	10,2346	4,0315	41	38,1471	15,0266	71	66,0596	26,0216
12	11,1650	4,3980	42	39,0775	15,3931	72	66,9901	26,3881
13	12,0954	4,7645	43	40,0080	15,7596	73	67,9205	26,7546
14	13,0258	5,1310	44	40,9384	16,1261	74	68,8509	27,1211
15	13,9563	5,4975	45	41,8688	16,4926	75	69,7813	27,4876
16	14,8867	5,8640	46	42,7992	16,8191	76	70,7117	27,8541
17	15,8171	6,2305	47	43,7296	17,2256	77	71,6422	28,2206
18	16,7475	6,5970	48	44,6600	17,5921	78	72,5726	28,5871
19	17,6779	6,9635	49	45,5905	17,9586	79	73,5030	28,9536
20	18,6084	7,3300	50	46,5209	18,3251	80	74,4334	29,3201
21	19,5388	7,6965	51	47,4513	18,6916	81	75,3638	29,6866
22	20,4692	8,0630	52	48,3817	19,0581	82	76,2942	30,0531
23	21,3996	8,4295	53	49,3121	19,4246	83	77,2247	30,4196
24	22,3300	8,7960	54	50,2425	19,7911	84	78,1551	30,7861
25	23,2604	9,1625	55	51,1730	20,1576	85	79,0855	31,1526
26	24,1909	9,5290	56	52,1034	20,5241	86	80,0159	31,5191
27	25,1213	9,8955	57	53,0338	20,8906	87	80,9463	31,8856
28	26,0517	10,2620	58	53,9642	21,2571	88	81,8767	32,2521
29	26,9821	10,6285	59	54,8946	21,6236	89	82,8072	32,6186
30	27,9125	10,9950	60	55,8251	21,9901	90	83,7376	32,9851
31	28,8429	11,3615	61	56,7555	22,3566	91	84,6680	33,3516
32	29,7734	11,7280	62	57,6859	22,7231	92	85,5984	33,7181
33	30,7038	12,0945	63	58,6163	23,0896	93	86,5288	34,0846
34	31,6342	12,4610	64	59,5467	23,4561	94	87,4593	34,4511
35	32,5646	12,8275	65	60,4771	23,8226	95	88,3897	34,8176
36	33,4950	13,1940	66	61,4076	24,1891	96	89,3201	35,1841
37	34,4255	13,5605	67	62,3380	24,5556	97	90,2505	35,5506
38	35,3559	13,9270	68	63,2684	24,9221	98	91,1809	35,9171
39	36,2863	14,2935	69	64,1988	25,2886	99	92,1113	36,2836
R	y	x	R	y	x	R	y	x

68° 30′

22°

R	x	y	R	x	y	R	x	y
10	9,2718	3,7461	40	37,0874	14,9843	70	64,9029	26,2225
11	10,1990	4,1207	41	38,0145	15,3589	71	65,8301	26,5971
12	11,1262	4,4953	42	38,9417	15,7335	72	66,7572	26,9717
13	12,0534	4,8699	43	39,8689	16,1081	73	67,6844	27,3463
14	12,9806	5,2445	44	40,7961	16,4827	74	68,6116	27,7209
15	13,9078	5,6191	45	41,7233	16,8573	75	69,5388	28,0955
16	14,8349	5,9937	46	42,6505	17,2319	76	70,4660	28,4701
17	15,7621	6,3683	47	43,5776	17,6065	77	71,3932	28,8447
18	16,6893	6,7429	48	44,5048	17,9811	78	72,3203	29,2193
19	17,6165	7,1175	49	45,4320	18,3557	79	73,2475	29,5939
20	18,5437	7,4921	50	46,3592	18,7303	80	74,1747	29,9685
21	19,4709	7,8667	51	47,2864	19,1049	81	75,1019	30,3431
22	20,3980	8,2413	52	48,2136	19,4795	82	76,0291	30,7177
23	21,3252	8,6160	53	49,1407	19,8541	83	76,9563	31,0923
24	22,2524	8,9906	54	50,0679	20,2288	84	77,8834	31,4670
25	23,1796	9,3652	55	50,9951	20,6034	85	78,8106	31,8416
26	24,1068	9,7398	56	51,9223	20,9780	86	79,7378	32,2162
27	25,0340	10,1144	57	52,8495	21,3526	87	80,6650	32,5908
28	25,9611	10,4890	58	53,7767	21,7272	88	81,5922	32,9654
29	26,8883	10,8636	59	54,7038	22,1018	89	82,5194	33,3400
30	27,8155	11,2382	60	55,6310	22,4764	90	83,4465	33,7146
31	28,7427	11,6128	61	56,5582	22,8510	91	84,3737	34,0892
32	29,6699	11,9874	62	57,4854	23,2256	92	85,3009	34,4638
33	30,5971	12,3620	63	58,4126	23,6002	93	86,2281	34,8384
34	31,5243	12,7366	64	59,3398	23,9748	94	87,1553	35,2130
35	32,4514	13,1112	65	60,2670	24,3494	95	88,0825	35,5876
36	33,3786	13,4858	66	61,1941	24,7240	96	89,0096	35,9622
37	34,3058	13,8604	67	62,1213	25,0986	97	89,9368	36,3368
38	35,2330	14,2351	68	63,0485	25,4732	98	90,8640	36,7114
39	36,1602	14,6097	69	63,9757	25,8479	99	91,7912	37,0861
R	y	x	R	y	x	R	y	x

68°

4 1438

22° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,2388	3,8268	40	36,9552	15,3073	70	64,6716	26,7878
11	10,1627	4,2095	41	37,8791	15,6900	71	65,5954	27,1705
12	11,0866	4,5922	42	38,8029	16,0727	72	66,5193	27,5532
13	12,0104	4,9749	43	39,7268	16,4554	73	67,4432	27,9359
14	12,9343	5,3576	44	40,6507	16,8381	74	68,3671	28,3186
15	13,8582	5,7403	45	41,5746	17,2208	75	69,2910	28,7013
16	14,7821	6,1229	46	42,4985	17,6034	76	70,2148	29,0839
17	15,7060	6,5056	47	43,4223	17,9861	77	71,1387	29,4666
18	16,6298	6,8883	48	44,3462	18,3688	78	72,0626	29,8493
19	17,5537	7,2710	49	45,2701	18,7515	79	72,9865	30,2320
20	18,4776	7,6537	50	46,1940	19,1342	80	73,9104	30,6147
21	19,4015	8,0364	51	47,1179	19,5169	81	74,8342	30,9974
22	20,3253	8,4190	52	48,0417	19,8995	82	75,7581	31,3800
23	21,2492	8,8017	53	48,9656	20,2822	83	76,6820	31,7627
24	22,1731	9,1844	54	49,8895	20,6649	84	77,6059	32,1454
25	23,0970	9,5671	55	50,8134	21,0476	85	78,5298	32,5281
26	24,0209	9,9498	56	51,7373	21,4303	86	79,4536	32,9108
27	24,9447	10,3325	57	52,6611	21,8130	87	80,3775	33,2935
28	25,8686	10,7151	58	53,5850	22,1956	88	81,3014	33,6761
29	26,7925	11,0978	59	54,5089	22,5783	89	82,2253	34,0588
30	27,7164	11,4805	60	55,4328	22,9610	90	83,1492	34,4415
31	28,6403	11,8632	61	56,3567	23,3437	91	84,0730	34,8242
32	29,5641	12,2459	62	57,2805	23,7264	92	84,9969	35,2069
33	30,4880	12,6286	63	58,2044	24,1091	93	85,9208	35,5896
34	31,4119	13,0112	64	59,1283	24,4917	94	86,8447	35,9722
35	32,3358	13,3939	65	60,0522	24,8744	95	87,7686	36,3549
36	33,2597	13,7766	66	60,9760	25,2571	96	88,6924	36,7376
37	34,1835	14,1593	67	61,8999	25,6398	97	89,6163	37,1203
38	35,1074	14,5420	68	62,8238	26,0225	98	90,5402	37,5030
39	36,0313	14,9247	69	63,7477	26,4052	99	91,4641	37,8857
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

67° 30′

23°

R	x	y	R	x	y	R	x	y
10	9,2050	3,9073	40	36,8202	15,6292	70	64,4353	27,3512
11	10,1256	4,2980	41	37,7407	16,0200	71	65,3558	27,7419
12	11,0461	4,6888	42	38,6612	16,4107	72	66,2763	28,1326
13	11,9666	5,0795	43	39,5817	16,8014	73	67,1969	28,5234
14	12,8871	5,4702	44	40,5022	17,1922	74	68,1174	28,9141
15	13,8076	5,8610	45	41,4227	17,5829	75	69,0379	29,3048
16	14,7281	6,2517	46	42,3432	17,9736	76	69,9584	29,6956
17	15,6486	6,6424	47	43,2637	18,3644	77	70,8789	30,0863
18	16,5691	7,0332	48	44,1842	18,7551	78	71,7994	30,4770
19	17,4896	7,4239	49	45,1047	19,1458	79	72,7199	30,8678
20	18,4101	7,8146	50	46,0252	19,5366	80	73,6404	31,2585
21	19,3306	8,2054	51	46,9457	19,9273	81	74,5609	31,6492
22	20,2511	8,5961	52	47,8663	20,3180	82	75,4814	32,0400
23	21,1716	8,9868	53	48,7868	20,7087	83	76,4019	32,4307
24	22,0921	9,3775	54	49,7073	21,0995	84	77,3224	32,8214
25	23,0126	9,7683	55	50,6278	21,4902	85	78,2429	33,2121
26	23,9331	10,1590	56	51,5483	21,8809	86	79,1634	33,6029
27	24,8536	10,5497	57	52,4688	22,2717	87	80,0839	33,9936
28	25,7741	10,9405	58	53,3893	22,6624	88	81,0044	34,3843
29	26,6946	11,3312	59	54,3098	23,0531	89	81,9249	34,7751
30	27,6151	11,7219	60	55,2303	23,4439	90	82,8454	35,1658
31	28,5357	12,1127	61	56,1508	23,8346	91	83,7659	35,5565
32	29,4562	12,5034	62	57,0713	24,2253	92	84,6864	35,9473
33	30,3767	12,8941	63	57,9918	24,6161	93	85,6070	36,3380
34	31,2972	13,2849	64	58,9123	25,0068	94	86,5275	36,7287
35	32,2177	13,6756	65	59,8328	25,3975	95	87,4480	37,1195
36	33,1382	14,0663	66	60,7533	25,7883	96	88,3685	37,5102
37	34,0587	14,4571	67	61,6738	26,1790	97	89,2890	37,9009
38	34,9792	14,8478	68	62,5943	26,5697	98	90,2095	38,2917
39	35,8997	15,2385	69	63,5148	26,9604	99	91,1300	38,6824
R	y	x	R	y	x	R	y	x

67°

23° 30′

R	x	y	R	x	y	R	x	y
10	9,1706	3,9875	40	36,6824	15,9500	70	64,1942	27,9124
11	10,0877	4,3862	41	37,5995	16,3487	71	65,1113	28,3112
12	11,0047	4,7850	42	38,5165	16,7475	72	66,0283	28,7099
13	11,9218	5,1837	43	39,4336	17,1462	73	66,9454	29,1087
14	12,8388	5,5825	44	40,3506	17,5450	74	67,8624	29,5074
15	13,7559	5,9812	45	41,2677	17,9437	75	68,7795	29,9062
16	14,6730	6,3800	46	42,1848	18,3425	76	69,6966	30,3049
17	15,5900	6,7787	47	43,1018	18,7412	77	70,6136	30,7037
18	16,5071	7,1775	48	44,0189	19,1400	78	71,5307	31,1024
19	17,4241	7,5762	49	44,9359	19,5387	79	72,4477	31,5012
20	18,3412	7,9750	50	45,8530	19,9375	80	73,3648	31,8999
21	19,2583	8,3737	51	46,7701	20,3362	81	74,2819	32,2987
22	20,1753	8,7725	52	47,6871	20,7350	82	75,1989	32,6974
23	21,0924	9,1712	53	48,6042	21,1337	83	76,1160	33,0962
24	22,0094	9,5700	54	49,5212	21,5324	84	77,0330	33,4949
25	22,9265	9,9687	55	50,4383	21,9312	85	77,9501	33,8937
26	23,8436	10,3675	56	51,3554	22,3299	86	78,8672	34,2924
27	24,7606	10,7662	57	52,2724	22,7287	87	79,7842	34,6912
28	25,6777	11,1650	58	53,1895	23,1274	88	80,7013	35,0899
29	26,5947	11,5637	59	54,1065	23,5262	89	81,6183	35,4887
30	27,5118	11,9625	60	55,0236	23,9249	90	82,5354	35,8874
31	28,4289	12,3612	61	55,9407	24,3237	91	83,4525	36,2862
32	29,3459	12,7600	62	56,8577	24,7224	92	84,3695	36,6849
33	30,2630	13,1587	63	57,7748	25,1212	93	85,2866	37,0837
34	31,1800	13,5575	64	58,6918	25,5199	94	86,2036	37,4824
35	32,0971	13,9562	65	59,6089	25,9187	95	87,1207	37,8812
36	33,0142	14,3550	66	60,5260	26,3174	96	88,0378	38,2799
37	33,9312	14,7537	67	61,4430	26,7162	97	88,9548	38,6787
38	34,8483	15,1525	68	62,3601	27,1149	98	89,8719	39,0774
39	35,7653	15,5512	69	63,2771	27,5137	99	90,7889	39,4762
R	y	x	R	y	x	R	y	x

66° 30′

24°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,1355	4,0674	40	36,5418	16,2695	70	63,9482	28,4716
11	10,0490	4,4741	41	37,4554	16,6762	71	64,8617	28,8783
12	10,9625	4,8808	42	38,3689	17,0829	72	65,7753	29,2850
13	11,8761	5,2876	43	39,2825	17,4897	73	66,6888	29,6918
14	12,7896	5,6943	44	40,1960	17,8964	74	67,6024	30,0985
15	13,7032	6,1010	45	41,1095	18,3031	75	68,5159	30,5052
16	14,6167	6,5078	46	42,0231	18,7099	76	69,4295	30,9120
17	15,5303	6,9145	47	42,9366	19,1166	77	70,3430	31,3187
18	16,4438	7,3213	48	43,8502	19,5234	78	71,2565	31,7255
19	17,3574	7,7280	49	44,7637	19,9301	79	72,1701	32,1322
20	18,2709	8,1347	50	45,6773	20,3368	80	73,0836	32,5389
21	19,1845	8,5415	51	46,5908	20,7436	81	73,9972	32,9457
22	20,0980	8,9482	52	47,5044	21,1503	82	74,9107	33,3524
23	21,0115	9,3549	53	48,4179	21,5570	83	75,8243	33,7591
24	21,9251	9,7617	54	49,3315	21,9638	84	76,7378	34,1659
25	22,8386	10,1684	55	50,2450	22,3705	85	77,6514	34,5726
26	23,7522	10,5752	56	51,1585	22,7773	86	78,5649	34,9794
27	24,6657	10,9819	57	52,0721	23,1840	87	79,4785	35,3861
28	25,5793	11,3886	58	52,9856	23,5907	88	80,3920	35,7928
29	26,4928	11,7954	59	53,8992	23,9975	89	81,3055	36,1996
30	27,4064	12,2021	60	54,8127	24,4042	90	82,2191	36,6063
31	28,3199	12,6088	61	55,7263	24,8109	91	83,1326	37,0130
32	29,2335	13,0156	62	56,6398	25,2177	92	84,0462	37,4198
33	30,1470	13,4223	63	57,5534	25,6244	93	84,9597	37,8265
34	31,0605	13,8290	64	58,4669	26,0311	94	85,8733	38,2332
35	31,9741	14,2358	65	59,3805	26,4379	95	86,7868	38,6400
36	32,8876	14,6425	66	60,2940	26,8446	96	87,7004	39,0467
37	33,8012	15,0493	67	61,2075	27,2514	97	88,6139	39,4535
38	34,7147	15,4560	68	62,1211	27,6581	98	89,5275	39,8602
39	35,6283	15,8627	69	63,0346	28,0648	99	90,4410	40,2669
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

66°

24° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,0996	4,1469	40	36,3985	16,5877	70	63,6973	29,0285
11	10,0096	4,5616	41	37,3084	17,0024	71	64,6073	29,4432
12	10,9195	4,9763	42	38,2184	17,4171	72	65,5172	29,8579
13	11,8295	5,3910	43	39,1283	17,8318	73	66,4272	30,2726
14	12,7395	5,8057	44	40,0383	18,2465	74	67,3371	30,6873
15	13,6494	6,2204	45	40,9483	18,6612	75	68,2471	31,1020
16	14,5594	6,6351	46	41,8582	19,0759	76	69,1571	31,5167
17	15,4693	7,0498	47	42,7682	19,4906	77	70,0670	31,9314
18	16,3793	7,4645	48	43,6781	19,9053	78	70,9770	32,3461
19	17,2893	7,8792	49	44,5881	20,3200	79	71,8869	32,7608
20	18,1992	8,2939	50	45,4981	20,7347	80	72,7969	33,1755
21	19,1092	8,7086	51	46,4080	21,1494	81	73,7069	33,5902
22	20,0191	9,1233	52	47,3180	21,5640	82	74,6168	34,0048
23	20,9291	9,5379	53	48,2279	21,9787	83	75,5268	34,4195
24	21,8391	9,9526	54	49,1379	22,3934	84	76,4367	34,8342
25	22,7490	10,3673	55	50,0479	22,8081	85	77,3467	35,2489
26	23,6590	10,7820	56	50,9578	23,2228	86	78,2567	35,6636
27	24,5690	11,1967	57	51,8678	23,6375	87	79,1666	36,0783
28	25,4789	11,6114	58	52,7778	24,0522	88	80,0766	36,4930
29	26,3889	12,0261	59	53,6877	24,4669	89	80,9866	36,9077
30	27,2988	12,4408	60	54,5977	24,8816	90	81,8965	37,3224
31	28,2088	12,8555	61	55,5076	25,2963	91	82,8065	37,7371
32	29,1188	13,2702	62	56,4176	25,7110	92	83,7164	38,1518
33	30,0287	13,6849	63	57,3276	26,1257	93	84,6264	38,5665
34	30,9387	14,0996	64	58,2375	26,5404	94	85,5364	38,9812
35	31,8486	14,5143	65	59,1475	26,9551	95	86,4463	39,3959
36	32,7586	14,9290	66	60,0574	27,3698	96	87,3563	39,8106
37	33,6686	15,3436	67	60,9674	27,7844	97	88,2662	40,2252
38	34,5785	15,7583	68	61,8774	28,1991	98	89,1762	40,6399
39	35,4885	16,1730	69	62,7873	28,6138	99	90,0862	41,0546
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

65° 30′

25°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,0631	4,2262	40	36,2523	16,9047	70	63,4415	29,5833
11	9,9694	4,6488	41	37,1586	17,3273	71	64,3479	30,0059
12	10,8757	5,0714	42	38,0649	17,7500	72	65,2542	30,4285
13	11,7820	5,4940	43	38,9712	18,1726	73	66,1605	30,8511
14	12,6883	5,9167	44	39,8775	18,5952	74	67,0668	31,2738
15	13,5946	6,3393	45	40,7839	19,0178	75	67,9731	31,6964
16	14,5009	6,7619	46	41,6902	19,4404	76	68,8794	32,1190
17	15,4072	7,1845	47	42,5965	19,8631	77	69,7857	32,5416
18	16,3135	7,6071	48	43,5028	20,2857	78	70,6920	32,9642
19	17,2198	8,0297	49	44,4091	20,7083	79	71,5983	33,3868
20	18,1262	8,4524	50	45,3154	21,1309	80	72,5046	33,8095
21	19,0325	8,8750	51	46,2217	21,5535	81	73,4109	34,2321
22	19,9388	9,2976	52	47,1280	21,9761	82	74,3172	34,6547
23	20,8451	9,7202	53	48,0343	22,3988	83	75,2235	35,0773
24	21,7514	10,1428	54	48,9406	22,8214	84	76,1299	35,4999
25	22,6577	10,5655	55	49,8469	23,2440	85	77,0362	35,9226
26	23,5640	10,9881	56	50,7532	23,6666	86	77,9425	36,3452
27	24,4703	11,4107	57	51,6595	24,0892	87	78,8488	36,7678
28	25,3766	11,8333	58	52,5659	24,5119	88	79,7551	37,1904
29	26,2829	12,2559	59	53,4722	24,9345	89	80,6614	37,6130
30	27,1892	12,6785	60	54,3785	25,3571	90	81,5677	38,0356
31	28,0955	13,1012	61	55,2848	25,7797	91	82,4740	38,4583
32	29,0018	13,5238	62	56,1911	26,2023	92	83,3803	38,8809
33	29,9082	13,9464	63	57,0974	26,6250	93	84,2866	39,3035
34	30,8145	14,3690	64	58,0037	27,0476	94	85,1929	39,7261
35	31,7208	14,7916	65	58,9100	27,4702	95	86,0992	40,1487
36	32,6271	15,2143	66	59,8163	27,8928	96	87,0055	40,5714
37	33,5334	15,6369	67	60,7226	28,3154	97	87,9119	40,9940
38	34,4397	16,0595	68	61,6289	28,7380	98	88,8182	41,4166
39	35,3460	16,4821	69	62,5352	29,1607	99	89,7245	41,8392
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

65°

25° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	9,0259	4,3051	40	36,1034	17,2204	70	63,1810	30,1358
11	9,9284	4,7356	41	37,0060	17,6510	71	64,0836	30,5663
12	10,8310	5,1661	42	37,9086	18,0815	72	64,9861	30,9968
13	11,7336	5,5966	43	38,8112	18,5120	73	65,8887	31,4273
14	12,6362	6,0272	44	39,7138	18,9425	74	66,7913	31,8578
15	13,5388	6,4577	45	40,6163	19,3730	75	67,6939	32,2883
16	14,4414	6,8882	46	41,5189	19,8035	76	68,5965	32,7188
17	15,3439	7,3187	47	42,4215	20,2340	77	69,4991	33,1494
18	16,2465	7,7492	48	43,3241	20,6645	78	70,4017	33,5799
19	17,1491	8,1797	49	44,2267	21,0950	79	71,3042	34,0104
20	18,0517	8,6102	50	45,1293	21,5256	80	72,2068	34,4409
21	18,9543	9,0407	51	46,0318	21,9561	81	73,1094	34,8714
22	19,8569	9,4712	52	46,9344	22,3866	82	74,0120	35,3019
23	20,7595	9,9018	53	47,8370	22,8171	83	74,9146	35,7324
24	21,6620	10,3323	54	48,7396	23,2476	84	75,8172	36,1629
25	22,5646	10,7628	55	49,6422	23,6781	85	76,7197	36,5934
26	23,4672	11,1933	56	50,5448	24,1086	86	77,6223	37,0240
27	24,3698	11,6238	57	51,4474	24,5391	87	78,5249	37,4545
28	25,2724	12,0543	58	52,3499	24,9696	88	79,4275	37,8850
29	26,1750	12,4848	59	53,2525	25,4002	89	80,3301	38,3155
30	27,0776	12,9153	60	54,1551	25,8307	90	81,2327	38,7460
31	27,9801	13,3458	61	55,0577	26,2612	91	82,1353	39,1765
32	28,8827	13,7764	62	55,9603	26,6917	92	83,0378	39,6070
33	29,7853	14,2069	63	56,8629	27,1222	93	83,9404	40,0375
34	30,6879	14,6374	64	57,7655	27,5527	94	84,8430	40,4680
35	31,5905	15,0679	65	58,6680	27,9832	95	85,7456	40,8986
36	32,4931	15,4984	66	59,5706	28,4137	96	86,6482	41,3291
37	33,3957	15,9289	67	60,4732	28,8442	97	87,5508	41,7596
38	34,2982	16,3594	68	61,3758	29,2748	98	88,4534	42,1901
39	35,2008	16,7899	69	62,2784	29,7053	99	89,3559	42,6206
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

64° 30′

26°

R	x	y	R	x	y	R	x	y
10	8,9879	4,3837	40	35,9518	17,5348	70	62,9156	30,6860
11	9,8867	4,8221	41	36,8506	17,9732	71	63,8144	31,1244
12	10,7855	5,2605	42	37,7494	18,4116	72	64,7132	31,5627
13	11,6843	5,6988	43	38,6481	18,8500	73	65,6120	32,0011
14	12,5831	6,1372	44	39,5469	19,2883	74	66,5108	32,4395
15	13,4819	6,5756	45	40,4457	19,7267	75	67,4096	32,8778
16	14,3807	7,0139	46	41,3445	20,1651	76	68,3083	33,3162
17	15,2795	7,4523	47	42,2433	20,6034	77	69,2071	33,7546
18	16,1783	7,8907	48	43,1421	21,0418	78	70,1059	34,1929
19	17,0771	8,3291	49	44,0409	21,4802	79	71,0047	34,6313
20	17,9759	8,7674	50	44,9397	21,9186	80	71,9035	35,0697
21	18,8747	9,2058	51	45,8385	22,3569	81	72,8023	35,5081
22	19,7735	9,6442	52	46,7373	22,7953	82	73,7011	35,9464
23	20,6723	10,0825	53	47,6361	23,2337	83	74,5999	36,3848
24	21,5711	10,5209	54	48,5349	23,6720	84	75,4987	36,8232
25	22,4699	10,9593	55	49,4337	24,1104	85	76,3975	37,2615
26	23,3686	11,3976	56	50,3325	24,5488	86	77,2963	37,6999
27	24,2674	11,8360	57	51,2313	24,9872	87	78,1951	38,1383
28	25,1662	12,2744	58	52,1301	25,4255	88	79,0939	38,5767
29	26,0650	12,7128	59	53,0288	25,8639	89	79,9927	39,0150
30	26,9638	13,1511	60	53,9276	26,3023	90	80,8915	39,4534
31	27,8626	13,5895	61	54,8264	26,7406	91	81,7903	39,8918
32	28,7614	14,0279	62	55,7252	27,1790	92	82,6891	40,3301
33	29,6602	14,4662	63	56,6240	27,6174	93	83,5878	40,7685
34	30,5590	14,9046	64	57,5228	28,0558	94	84,4866	41,2069
35	31,4578	15,3430	65	58,4216	28,4941	95	85,3854	41,6453
36	32,3566	15,7814	66	59,3204	28,9325	96	86,2842	42,0836
37	33,2554	16,2197	67	60,2192	29,3709	97	87,1830	42,5220
38	34,1542	16,6581	68	61,1180	29,8092	98	88,0818	42,9604
39	35,0530	17,0965	69	62,0168	30,2476	99	88,9806	43,3987
R	y	x	R	y	x	R	y	x

64°

26° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	8,9493	4,4620	40	35,7974	17,8479	70	62,6454	31,2338
11	9,8443	4,9082	41	36,6923	18,2941	71	63,5403	31,6800
12	10,7392	5,3544	42	37,5872	18,7403	72	64,4353	32,1262
13	11,6341	5,8006	43	38,4822	19,1865	73	65,3302	32,5724
14	12,5291	6,2468	44	39,3771	19,6327	74	66,2251	33,0186
15	13,4240	6,6930	45	40,2720	20,0789	75	67,1201	33,4648
16	14,3189	7,1392	46	41,1670	20,5251	76	68,0150	33,9110
17	15,2139	7,5854	47	42,0619	20,9713	77	68,9099	34,3572
18	16,1088	8,0316	48	42,9568	21,4175	78	69,8049	34,8034
19	17,0038	8,4778	49	43,8518	21,8637	79	70,6998	35,2496
20	17,8987	8,9240	50	44,7467	22,3099	80	71,5947	35,6958
21	18,7936	9,3702	51	45,6417	22,7561	81	72,4897	36,1420
22	19,6886	9,8164	52	46,5366	23,2023	82	73,3846	36,5882
23	20,5835	10,2625	53	47,4315	23,6485	83	74,2796	37,0344
24	21,4784	10,7087	54	48,3265	24,0947	84	75,1745	37,4806
25	22,3734	11,1549	55	49,2214	24,5409	85	76,0694	37,9268
26	23,2683	11,6011	56	50,1163	24,9871	86	76,9644	38,3730
27	24,1632	12,0473	57	51,0113	25,4333	87	77,8593	38,8192
28	25,0582	12,4935	58	51,9062	25,8795	88	78,7542	39,2654
29	25,9531	12,9397	59	52,8011	26,3257	89	79,6492	39,7116
30	26,8480	13,3859	60	53,6961	26,7719	90	80,5441	40,1578
31	27,7430	13,8321	61	54,5910	27,2181	91	81,4390	40,6040
32	28,6379	14,2783	62	55,4859	27,6643	92	82,3340	41,0502
33	29,5328	14,7245	63	56,3809	28,1105	93	83,2289	41,4964
34	30,4278	15,1707	64	57,2758	28,5567	94	84,1238	41,9426
35	31,3227	15,6169	65	58,1707	29,0029	95	85,0188	42,3888
36	32,2176	16,0631	66	59,0657	29,4491	96	85,9137	42,8350
37	33,1126	16,5093	67	59.9606	29,8953	97	86.8086	43,2812
38	34,0075	16,9555	68	60,8555	30,3415	98	87,7036	43,7274
39	34,9024	17,4017	69	61,7505	30,7876	99	88,5985	44,1736
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

63° 30′

27°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	8,9101	4,5399	40	35,6403	18,1596	70	62,3705	31,7793
11	9,8011	4,9939	41	36,5313	18,6136	71	63,2615	32,2333
12	10,6921	5,4479	42	37,4223	19,0676	72	64,1525	32,6873
13	11,5831	5,9019	43	38,3133	19,5216	73	65,0435	33,1413
14	12,4741	6,3559	44	39,2043	19,9756	74	65,9345	33,5953
15	13,3651	6,8099	45	40,0953	20,4296	75	66,8255	34,0493
16	14,2561	7,2638	46	40,9863	20,8836	76	67,7165	34,5033
17	15,1471	7,7178	47	41,8773	21,3376	77	68,6075	34,9573
18	16,0381	8,1718	48	42,7683	21,7915	78	69,4985	35,4113
19	16,9291	8,6258	49	43,6593	22,2455	79	70,3895	35,8652
20	17,8201	9,0798	50	44,5503	22,6995	80	71,2805	36,3192
21	18,7111	9,5338	51	45,4413	23,1535	81	72,1715	36,7732
22	19,6021	9,9878	52	46,3323	23,6075	82	73,0625	37,2272
23	20,4931	10,4418	53	47,2233	24,0615	83	73,9535	37,6812
24	21,3842	10,8958	54	48,1144	24,5155	84	74,8445	38,1352
25	22,2752	11,3498	55	49,0054	24,9695	85	75,7356	38,5892
26	23,1662	11,8038	56	49,8964	25,4235	86	76,6266	39,0432
27	24,0572	12,2577	57	50,7874	25,8775	87	77,5176	39,4972
28	24,9482	12,7117	58	51,6784	26,3314	88	78,4086	39,9512
29	25,8392	13,1657	59	52,5694	26,7854	89	79,2996	40,4052
30	26,7302	13,6197	60	53,4604	27,2394	90	80,1906	40,8591
31	27,6212	14,0737	61	54,3514	27,6934	91	81,0816	41,3131
32	28,5122	14,5277	62	55,2424	28,1474	92	81,9726	41,7671
33	29,4032	14,9817	63	56,1334	28,6014	93	82,8636	42,2211
34	30,2943	15,4357	64	57,0244	29,0554	94	83,7546	42,6751
35	31,1852	15,8897	65	57,9154	29,5094	95	84,6456	43,1291
36	32,0762	16,3437	66	58,8064	29,9634	96	85,5366	43,5831
37	32,9672	16,7976	67	59,6974	30,4174	97	86,4276	44,0371
38	33,8582	17,2516	68	60,5884	30,8714	98	87,3186	44,4911
39	34,7493	17,7056	69	61,4794	31,3253	99	88,2096	44,9451
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

63°

27° 30′

R	x	y	R	x	y	R	x	y
10	8,8701	4,6175	40	35,4804	18,4699	70	62,0908	32,3224
11	9,7571	5,0792	41	36,3674	18,9317	71	62,9778	32,7842
12	10,6441	5,5410	42	37,2545	19,3934	72	63,8648	33,2459
13	11,5311	6,0027	43	38,1415	19,8552	73	64,7518	33,7076
14	12,4182	6,4645	44	39,0285	20,3169	74	65,6388	34,1694
15	13,3052	6,9262	45	39,9155	20,7787	75	66,5258	34,6311
16	14,1922	7,3880	46	40,8025	21,2404	76	67,4128	35,0929
17	15,0792	7,8497	47	41,6895	21,7022	77	68,2998	35,5546
18	15,9662	8,3115	48	42,5765	22,1639	78	69,1868	36,0164
19	16,8532	8,7732	49	43,4635	22,6257	79	70,0739	36,4781
20	17,7402	9,2350	50	44,3505	23,0874	80	70,9609	36,9399
21	18,6272	9,6967	51	45,2376	23,5492	81	71,8479	37,4016
22	19,5142	10,1585	52	46,1246	24,0109	82	72,7349	37,8634
23	20,4012	10,6202	53	47,0116	24,4727	83	73,6219	38,3251
24	21,2883	11,0820	54	47,8986	24,9344	84	74,5089	38,7869
25	22,1753	11,5437	55	48,7856	25,3962	85	75,3959	39,2486
26	23,0623	12,0055	56	49,6726	25,8579	86	76,2829	39,7104
27	23,9493	12,4672	57	50,5596	26,3197	87	78,1699	40,1721
28	24,8363	12,9290	58	51,4466	26,7814	88	78,0570	40,6339
29	25,7233	13,3907	59	52,3336	27,2432	89	78,9440	41,0956
30	26,6103	13,8525	60	53,2206	27,7049	90	79,8310	41,5574
31	27,4973	14,3142	61	54,1077	28,1667	91	80,7180	42,0191
32	28,3843	14,7760	62	54,9947	28,6284	92	81,6050	42,4809
33	29,2714	15,2377	63	55,8817	29,0902	93	82,4920	42,9426
34	30,1584	15,6995	64	56,7687	29,5519	94	83,3790	43,4044
35	31,0454	16,1612	65	57,6557	30,0137	95	84,2660	43,8661
36	31,9324	16,6229	66	58,5427	30,4754	96	85,1530	44,3279
37	32,8194	17,0847	67	59,4297	30,9372	97	86,0401	44,7896
38	33,7064	17,5464	68	60,3167	31,3989	98	86,9271	45,2514
39	34,5934	18,0082	69	61,2037	31,8607	99	87,8141	45,7131
R	y	x	R	y	x	R	y	x

62° 30′

28°

R	x	y	R	x	y	R	x	y
10	8,8295	4,6947	40	35,3179	18,7789	70	61,8063	32,8630
11	9,7124	5,1642	41	36,2009	19,2483	71	62,6893	33,3325
12	10,5954	5,6337	42	37,0838	19,7178	72	63,5722	33,8020
13	11,4783	6,1031	43	37,9667	20,1873	73	64,4552	34,2714
14	12,3613	6,5726	44	38,8497	20,6567	74	65,3381	34,7409
15	13,2442	7,0421	45	39,7326	21,1262	75	66,2211	35,2104
16	14,1272	7,5115	46	40,6156	21,5957	76	67,1040	35,6798
17	15,0101	7,9810	47	41,4985	22,0652	77	67,9870	36,1493
18	15,8931	8,4505	48	42,3815	22,5346	78	68,8699	36,6188
19	16,7760	8,9200	49	43,2644	23,0041	79	69,7529	37,0883
20	17,6590	9,3894	50	44,1474	23,4736	80	70,6358	37,5577
21	18,5419	9,8589	51	45,0303	23,9430	81	71,5188	38,0272
22	19,4248	10,3284	52	45,9133	24,4125	82	72,4017	38,4967
23	20,3078	10,7978	53	46,7962	24,8820	83	73,2846	38,9661
24	21,1907	11,2673	54	47,6792	25,3515	84	74,1676	39,4356
25	22,0737	11,7368	55	48,5621	25,8209	85	75,0505	39,9051
26	22,9566	12,2063	56	49,4451	26,2904	86	75,9335	40,3746
27	23,8396	12,6757	57	50,3280	26,7599	87	76,8164	40,8440
28	24,7225	13,1452	58	51,2110	27,2294	88	77,6994	41,3135
29	25,6055	13,6147	59	52,0939	27,6988	89	78,5823	41,7830
30	26,4884	14,0841	60	52,9769	28,1683	90	79,4653	42,2524
31	27,3714	14,5536	61	53,8598	28,6378	91	80,3482	42,7219
32	28,2543	15,0231	62	54,7428	29,1072	92	81,2312	43,1914
33	29,1373	15,4926	63	55,6257	29,5767	93	82,1141	43,6609
34	30,0202	15,9620	64	56,5086	30,0462	94	82,9971	44,1303
35	30,9032	16,4315	65	57,3916	30,5157	95	83,8800	44,5998
36	31,7861	16,9010	66	58,2745	30,9851	96	84,7630	45,0693
37	32,6691	17,3704	67	59,1575	31,4546	97	85,6459	45,5387
38	33,5520	17,8399	68	60,0404	31,9241	98	86,5289	46,0082
39	34,4350	18,3094	69	60,9234	32,3935	99	87,4118	46,4777
R	y	x	R	y	x	R	y	x

62°

28° 30′

R	x	y	R	x	y	R	x	y
10	8,7882	4,7716	40	35,1527	19,0864	70	61,5172	33,4011
11	9,6670	5,2487	41	36,0315	19,5635	71	62,3960	33,8783
12	10,5458	5,7259	42	36,9103	20,0407	72	63,2748	34,3554
13	11,4246	6,2031	43	37,7891	20,5178	73	64,1536	34,8326
14	12,3034	6,6802	44	38,6680	20,9950	74	65,0325	35,3097
15	13,1823	7,1574	45	39,5468	21,4721	75	65,9113	35,7869
16	14,0611	7,6345	46	40,4256	21,9493	76	66,7901	36,2641
17	14,9399	8,1117	47	41,3044	22,4265	77	67,6689	36,7412
18	15,8187	8,5889	48	42,1832	22,9036	78	68,5477	37,2184
19	16,6975	9,0660	49	43,0620	23,3808	79	69,4266	37,6955
20	17,5763	9,5432	50	43,9409	23,8579	80	70,3054	38,1727
21	18,4552	10,0203	51	44,8197	24,3351	81	71,1842	38,6499
22	19,3340	10,4975	52	45,6985	24,8123	82	72,0630	39,1270
23	20,2128	10,9747	53	46,5773	25,2894	83	72,9418	39,6042
24	21,0916	11,4518	54	47,4561	25,7666	84	73,8206	40,0813
25	21,9704	11,9290	55	48,3349	26,2437	85	74,6995	40,5585
26	22,8492	12,4061	56	49,2138	26,7209	86	75,5783	41,0357
27	23,7281	12,8833	57	50,0926	27,1981	87	76,4571	41,5128
28	24,6069	13,3604	58	50,9714	27,6752	88	77,3359	41,9900
29	25,4857	13,8376	59	51,8502	28,1524	89	78,2147	42,4671
30	26,3645	14,3148	60	52,7290	28,6295	90	79,0935	42,9443
31	27,2433	14,7919	61	53,6078	29,1067	91	79,9724	43,4214
32	28,1221	15,2691	62	54,4867	29,5838	92	80,8512	43,8986
33	29,0010	15,7462	63	55,3655	30,0610	93	81,7300	44,3758
34	29,8798	16,2234	64	56,2443	30,5382	94	82,6088	44,8529
35	30,7586	16,7006	65	57,1231	31,0153	95	83,4876	45,3301
36	31,6374	17,1777	66	58,0019	31,4925	96	84,3664	45,8072
37	32,5162	17,6549	67	58,8807	31,9696	97	85,2453	46,2844
38	33,3951	18,1320	68	59,7596	32,4468	98	86,1241	46,7616
39	34,2739	18,6092	69	60,6384	32,9240	99	87,0029	47,2387
R	y	x	R	y	x	R	y	x

61° 30′

29°

R	x	y	R	x	y	R	x	y
10	8,7462	4,8481	40	34,9848	19,3924	70	61,2234	33,9367
11	9,6208	5,3329	41	35,8594	19,8772	71	62,0980	34,4215
12	10,4954	5,8177	42	36,7340	20,3620	72	62,9726	34,9063
13	11,3701	6,3025	43	37,6086	20,8468	73	63,8472	35,3911
14	12,2447	6,7873	44	38,4833	21,3316	74	64,7219	35,8759
15	13,1193	7,2721	45	39,3579	21,8164	75	65,5965	36,3607
16	13,9939	7,7570	46	40,2325	22,3012	76	66,4711	36,8455
17	14,8685	8,2418	47	41,1071	22,7861	77	67,3457	37,3303
18	15,7432	8,7266	48	41,9817	23,2709	78	68,2203	37,8152
19	16,6178	9,2114	49	42,8564	23,7557	79	69,0950	38,3000
20	17,4924	9,6962	50	43,7310	24,2405	80	69,9696	38,7848
21	18,3670	10,1810	51	44,6056	24,7253	81	70,8442	39,2696
22	19,2416	10,6658	52	45,4802	25,2101	82	71,7188	39,7544
23	20,1163	11,1506	53	46,3548	25,6949	83	72,5934	40,2392
24	20,9909	11,6354	54	47,2295	26,1797	84	73,4681	40,7240
25	21,8655	12,1202	55	48,1041	26,6645	85	74,3427	41,2088
26	22,7401	12,6051	56	48,9787	27,1493	86	75,2173	41,6936
27	23,6147	13,0899	57	49,8533	27,6341	87	76,0919	42,1784
28	24,4894	13,5747	58	50,7279	28,1190	88	76,9665	42,6632
29	25,3640	14,0595	59	51,6026	28,6038	89	77,8412	43,1481
30	26,2386	14,5443	60	52,4772	29,0886	90	78,7158	43,6329
31	27,1132	15,0291	61	53,3518	29,5734	91	79,5904	44,1177
32	27,9878	15,5139	62	54,2264	30,0582	92	80,4650	44,6025
33	28,8625	15,9987	63	55,1010	30,5430	93	81,3396	45,0873
34	29,7371	16,4835	64	55,9757	31,0278	94	82,2143	45,5721
35	30,6117	16,9683	65	56,8503	31,5126	95	83,0889	46,0569
36	31,4863	17,4531	66	57,7249	31,9974	96	83,9635	46,5417
37	32,3609	17,9380	67	58,5995	32,4822	97	84,8381	47,0265
38	33,2355	18,4228	68	59,4741	32,9671	98	85,7127	47,5113
39	34,1102	18,9076	69	60,3488	33,4519	99	86,5874	47,9962
R	y	x	R	y	x	R	y	x

61°

29° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	8,7036	4,9242	40	34,8142	19,6969	70	60,9249	34,4696
11	9,5739	5,4167	41	35,6846	20,1894	71	61,7953	34,9621
12	10,4443	5,9091	42	36,5549	20,6818	72	62,6656	35,4545
13	11,3146	6,4015	43	37,4253	21,1742	73	63,5360	35,9469
14	12,1850	6,8939	44	38,2957	21,6666	74	64,4063	36,4393
15	13,0553	7,3864	45	39,1660	22,1591	75	65,2767	36,9318
16	13,9257	7,8788	46	40,0364	22,6515	76	66,1470	37,4242
17	14,7960	8,3712	47	40,9067	23,1439	77	67,0174	37,9166
18	15,6664	8,8636	48	41,7771	23,6363	78	67,8877	38,4090
19	16,5368	9,3560	49	42,6474	24,1288	79	68,7581	38,9015
20	17,4071	9,8485	50	43,5178	24,6212	80	69,6285	39,3939
21	18,2775	10,3409	51	44,3881	25,1136	81	70,4988	39,8863
22	19,1478	10,8333	52	45,2585	25,6060	82	71,3692	40,3787
23	20,0182	11,3257	53	46,1289	26,0984	83	72,2395	40,8712
24	20,8885	11,8182	54	46,9992	26,5909	84	73,1099	41,3636
25	21,7589	12,3106	55	47,8696	27,0833	85	73,9802	41,8560
26	22,6292	12,8030	56	48,7399	27,5757	86	74,8506	42,3484
27	23,4996	13,2954	57	49,6103	28,0681	87	75,7209	42,8408
28	24,3700	13,7879	58	50,4806	28,5606	88	76,5913	43,3333
29	25,2403	14,2803	59	51,3510	29,0530	89	77,4617	43,8257
30	26,1107	14,7727	60	52,2213	29,5454	90	78,3320	44,3181
31	26,9810	15,2651	61	53,0917	30,0378	91	79,2024	44,8105
32	27,8514	15,7576	62	53,9621	30,5303	92	80,0727	45,3030
33	28,7217	16,2500	63	54,8324	31,0227	93	80,9431	45,7954
34	29,5921	16,7424	64	55,7028	31,5151	94	81,8134	46,2878
35	30,4624	17,2348	65	56,5731	32,0075	95	82,6838	46,7802
36	31,3328	17,7272	66	57,4435	32,5000	96	83,5541	47,2727
37	32,2032	18,2197	67	58,3138	32,9924	97	84,4245	47,7651
38	33,0735	18,7121	68	59,1842	33,4848	98	85,2949	48,2575
39	33,9439	19,2045	69	60,0545	33,9772	99	86,1652	48,7499
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

60° 30′

30°

R	x	y	R	x	y	R	x	y
10	8,6603	5,0000	40	34,6410	20,0000	70	60,6218	35,0000
11	9,5263	5,5000	41	35,5070	20,5000	71	61,4878	35,5000
12	10,3923	6,0000	42	36,3731	21,0000	72	62,3538	36,0000
13	11,2583	6,5000	43	37,2391	21,5000	73	63,2199	36,5000
14	12,1244	7,0000	44	38,1051	22,0000	74	64,0859	37,0000
15	12,9904	7,5000	45	38,9711	22,5000	75	64,9519	37,5000
16	13,8564	8,0000	46	39,8372	23,0000	76	65,8179	38,0000
17	14,7224	8,5000	47	40,7032	23,5000	77	66,6840	38,5000
18	15,5885	9,0000	48	41,5692	24,0000	78	67,5500	39,0000
19	16,4545	9,5000	49	42,4352	24,5000	79	68,4160	39,5000
20	17,3205	10,0000	50	43,3013	25,0000	80	69,2820	40,0000
21	18,1865	10,5000	51	44,1673	25,5000	81	70,1481	40,5000
22	19,0526	11,0000	52	45,0333	26,0000	82	71,0141	41,0000
23	19,9186	11,5000	53	45,8993	26,5000	83	71,8801	41,5000
24	20,7846	12,0000	54	46,7654	27,0000	84	72,7461	42,0000
25	21,6506	12,5000	55	47,6314	27,5000	85	73,6122	42,5000
26	22,5167	13,0000	56	48,4974	28,0000	86	74,4782	43,0000
27	23,3827	13,5000	57	49,3634	28,5000	87	75,3442	43,5000
28	24,2487	14,0000	58	50,2295	29,0000	88	76,2102	44,0000
29	25,1147	14,5000	59	51,0955	29,5000	89	77,0763	44,5000
30	25,9808	15,0000	60	51,9615	30,0000	90	77,9423	45,0000
31	26,8468	15,5000	61	52,8275	30,5000	91	78,8083	45,5000
32	27,7128	16,0000	62	53,6936	31,0000	92	79,6743	46,0000
33	28,5788	16,5000	63	54,5596	31,5000	93	80,5404	46,5000
34	29,4449	17,0000	64	55,4256	32,0000	94	81,4064	47,0000
35	30,3109	17,5000	65	56,2917	32,5000	95	82,2724	47,5000
36	31,1769	18,0000	66	57,1577	33,0000	96	83,1384	48,0000
37	32,0429	18,5000	67	58,0237	33,5000	97	84,0045	48,5000
38	32,9090	19,0000	68	58,8897	34,0000	98	84,8705	49,0000
39	33,7750	19,5000	69	59,7558	34,5000	99	85,7365	49,5000
R	y	x	R	y	x	R	y	x

60°

30° 30′

R	x	y	R	x	y	R	x	y
10	8,6163	5,0754	40	34,4652	20,3015	70	60,3140	35,5277
11	9,4779	5,5829	41	35,3268	20,8091	71	61,1757	36,0352
12	10,3395	6,0905	42	36,1884	21,3166	72	62,0373	36,5428
13	11,2012	6,5980	43	37,0501	21,8241	73	62,8989	37,0503
14	12,0628	7,1055	44	37,9117	22,3317	74	63,7606	37,5578
15	12,9244	7,6131	45	38,7733	22,8392	75	64,6222	38,0654
16	13,7861	8,1206	46	39,6349	23,3468	76	65,4838	38,5729
17	14,6477	8,6282	47	40,4966	23,8543	77	66,3454	39,0805
18	15,5093	9,1357	48	41,3582	24,3618	78	67,2071	39,5880
19	16,3710	9,6432	49	42,2198	24,8694	79	68,0687	40,0955
20	17,2326	10,1508	50	43,0815	25,3769	80	68,9303	40,6031
21	18,0942	10,6583	51	43,9431	25,8845	81	69,7920	41,1106
22	18,9558	11,1658	52	44,8047	26,3920	82	70,6536	41,6181
23	19,8175	11,6734	53	45,6663	26,8995	83	71,5152	42,1257
24	20,6791	12,1809	54	46,5280	27,4071	84	72,3768	42,6332
25	21,5407	12,6885	55	47,3896	27,9146	85	73,2385	43,1408
26	22,4024	13,1960	56	48,2512	28,4221	86	74,1001	43,6483
27	23,2640	13,7035	57	49,1129	28,9297	87	74,9617	44,1558
28	24,1256	14,2111	58	49,9745	29,4372	88	75,8234	44,6634
29	24,9872	14,7186	59	50,8361	29,9448	89	76,6850	45,1709
30	25,8489	15,2262	60	51,6977	30,4523	90	77,5466	45,6785
31	26,7105	15,7337	61	52,5594	30,9598	91	78,4083	46,1860
32	27,5721	16,2412	62	53,4210	31,4674	92	79,2699	46,6935
33	28,4338	16,7488	63	54,2826	31,9749	93	80,1315	47,2011
34	29,2954	17,2563	64	55,1443	32,4825	94	80,9931	47,7086
35	30,1570	17,7638	65	56,0059	32,9900	95	81,8548	48,2161
36	31,0186	18,2714	66	56,8675	33,4975	96	82,7164	48,7237
37	31,8803	18,7789	67	57,7292	34,0051	97	83,5780	49,2312
38	32,7419	19,2865	68	58,5908	34,5126	98	84,4397	49,7388
39	33,6035	19,7940	69	59,4524	35,0201	99	85,3013	50,2463
R	y	x	R	y	x	R	y	x

59° 30′

31°

R	x	y	R	x	y	R	x	y
10	8,5717	5,1504	40	34,2867	20,6015	70	60,0017	36,0527
11	9,4288	5,6654	41	35,1439	21,1166	71	60,8589	36,5677
12	10,2860	6,1805	42	36,0010	21,6316	72	61,7160	37,0827
13	11,1432	6,6955	43	36,8582	22,1466	73	62,5732	37,5978
14	12,0003	7,2105	44	37,7154	22,6617	74	63,4304	38,1128
15	12,8575	7,7256	45	38,5725	23,1767	75	64,2875	38,6279
16	13,7147	8,2406	46	39,4297	23,6918	76	65,1447	39,1429
17	14,5718	8,7556	47	40,2869	24,2068	77	66,0019	39,6579
18	15,4290	9,2707	48	41,1440	24,7218	78	66,8590	40,1730
19	16,2862	9,7857	49	42,0012	25,2369	79	67,7162	40,6880
20	17,1433	10,3008	50	42,8584	25,7519	80	68,5734	41,2030
21	18,0005	10,8158	51	43,7155	26,2669	81	69,4306	41,7181
22	18,8577	11,3308	52	44,5727	26,7820	82	70,2877	42,2331
23	19,7148	11,8459	53	45,4299	27,2970	83	71,1449	42,7482
24	20,5720	12,3609	54	46,2870	27,8121	84	72,0021	43,2632
25	21,4292	12,8760	55	47,1442	28,3271	85	72,8592	43,7782
26	22,2863	13,3910	56	48,0014	28,8421	86	73,7164	44,2933
27	23,1435	13,9060	57	48,8585	29,3572	87	74,5736	44,8083
28	24,0007	14,4211	58	49,7157	29,8722	88	75,4307	45,3234
29	24,8579	14,9361	59	50,5729	30,3872	89	76,2879	45,8384
30	25,7150	15,4511	60	51,4300	30,9023	90	77,1451	46,3534
31	26,5722	15,9662	61	52,2872	31,4173	91	78,0022	46,8685
32	27,4294	16,4812	62	53,1444	31,9324	92	78,8594	47,3835
33	28,2865	16,9963	63	54,0015	32,4474	93	79,7166	47,8985
34	29,1437	17,5113	64	54,8587	32,9624	94	80,5737	48,4136
35	30,0009	18,0263	65	55,7159	33,4775	95	81,4309	48,9286
36	30,8580	18,5414	66	56,5730	33,9925	96	82,2881	49,4437
37	31,7152	19,0564	67	57,4302	34,5076	97	83,1452	49,9587
38	32,5724	19,5714	68	58,2874	35,0226	98	84,0024	50,4737
39	33,4295	20,0865	69	59,1445	35,5376	99	84,8596	50,9888
R	y	x	R	y	x	R	y	x

59°

31° 30′

R	x	y	R	x	y	R	x	y
10	8,5264	5,2250	40	34,1056	20,8999	70	59,6848	36,5749
11	9,3790	5,7475	41	34,9582	21,4224	71	60,5375	37,0974
12	10,2317	6,2700	42	35,8109	21,9449	72	61,3901	37,6199
13	11,0843	6,7925	43	36,6635	22,4674	73	62,2427	38,1424
14	11,9370	7,3150	44	37,5162	22,9899	74	63,0954	38,6649
15	12,7896	7,8375	45	38,3688	23,5124	75	63,9480	39,1874
16	13,6422	8,3600	46	39,2214	24,0349	76	64,8007	39,7099
17	14,4949	8,8825	47	40,0741	24,5574	77	65,6533	40,2324
18	15,3475	9,4050	48	40,9267	25,0799	78	66,5059	40,7549
19	16,2002	9,9275	49	41,7794	25,6024	79	67,3586	41,2774
20	17,0528	10,4500	50	42,6320	26,1249	80	68,2112	41,7999
21	17,9054	10,9725	51	43,4846	26,6474	81	69,0639	42,3224
22	18,7581	11,4950	52	44,3373	27,1699	82	69,9165	42,8449
23	19,6107	12,0175	53	45,1899	27,6924	83	70,7691	43,3674
24	20,4634	12,5400	54	46,0426	28,2149	84	71,6218	43,8899
25	21,3160	13,0625	55	46,8952	28,7374	85	72,4744	44,4124
26	22,1686	13,5850	56	47,7478	29,2599	86	73,3271	44,9349
27	23,0213	14,1075	57	48,6005	29,7824	87	74,1797	45,4574
28	23,8739	14,6300	58	49,4531	30,3049	88	75,0323	45,9799
29	24,7266	15,1525	59	50,3058	30,8274	89	75,8850	46,5024
30	25,5792	15,6750	60	51,1584	31,3499	90	76,7376	47,0249
31	26,4318	16,1975	61	52,0110	31,8724	91	77,5903	47,5474
32	27,2845	16,7200	62	52,8637	32,3949	92	78,4429	48,0699
33	28,1371	17,2425	63	53,7163	32,9174	93	79,2955	48,5924
34	28,9898	17,7650	64	54,5690	33,4399	94	80,1482	49,1149
35	29,8424	18,2874	65	55,4216	33,9624	95	81,0008	49,6374
36	30,6950	18,8099	66	56,2743	34,4849	96	81,8535	50,1599
37	31,5477	19,3324	67	57,1269	35,0074	97	82,7061	50,6824
38	32,4003	19,8549	68	57,9795	35,5299	98	83,5587	51,2049
39	33,2530	20,3774	69	58,8322	36,0524	99	84,4114	51,7274
R	y	x	R	y	x	R	y	x

58° 30′

32°

R	x	y	R	x	y	R	x	y
10	8,4805	5,2992	40	33,9219	21,1968	70	59,3634	37,0943
11	9,3285	5,8291	41	34,7700	21,7267	71	60,2114	37,6243
12	10,1766	6,3590	42	35,6180	22,2566	72	61,0595	38,1542
13	11,0246	6,8890	43	36,4661	22,7865	73	61,9075	38,6841
14	11,8727	7,4189	44	37,3141	23,3164	74	62,7556	39,2140
15	12,7207	7,9488	45	38,1622	23,8464	75	63,6036	39,7439
16	13,5688	8,4787	46	39,0102	24,3763	76	64,4517	40,2739
17	14,4168	9,0086	47	39,8583	24,9062	77	65,2997	40,8038
18	15,2649	9,5385	48	40,7063	25,4361	78	66,1478	41,3337
19	16,1129	10,0685	49	41,5544	25,9660	79	66,9958	41,8636
20	16,9610	10,5984	50	42,4024	26,4960	80	67,8438	42,3935
21	17,8090	11,1283	51	43,2505	27,0259	81	68,6919	42,9235
22	18,6571	11,6582	52	44,0985	27,5558	82	69,5399	43,4534
23	19,5051	12,1881	53	44,9465	28,0857	83	70,3880	43,9833
24	20,3532	12,7181	54	45,7946	28,6156	84	71,2360	44,5132
25	21,2012	13,2480	55	46,6426	29,1456	85	72,0841	45,0431
26	22,0493	13,7779	56	47,4907	29,6755	86	72,9321	45,5731
27	22,8973	14,3078	57	48,3387	30,2054	87	73,7802	46,1030
28	23,7453	14,8377	58	49,1868	30,7353	88	74,6282	46,6329
29	24,5934	15,3677	59	50,0348	31,2652	89	75,4763	47,1628
30	25,4414	15,8976	60	50,8829	31,7952	90	76,3243	47,6927
31	26,2895	16,4275	61	51,7309	32,3251	91	77,1724	48,2227
32	27,1375	16,9574	62	52,5790	32,8550	92	78,0204	48,7526
33	27,9856	17,4873	63	53,4270	33,3849	93	78,8685	49,2825
34	28,8336	18,0173	64	54,2751	33,9148	94	79,7165	49,8124
35	29,6817	18,5472	65	55,1231	34,4448	95	80,5646	50,3423
36	30,5297	19,0771	66	55,9712	34,9747	96	81,4126	50,8722
37	31,3778	19,6070	67	56,8192	35,5046	97	82,2607	51,4022
38	32,2258	20,1369	68	57,6673	36,0345	98	83,1087	51,9321
39	33,0739	20,6669	69	58,5153	36,5644	99	83,9568	52,4620
R	y	x	R	y	x	R	y	x

58°

32° 30′

R	x	y	R	x	y	R	x	y
10	8,4339	5,3730	40	33,7357	21,4920	70	59,0374	37,6110
11	9,2773	5,9103	41	34,5790	22,0293	71	59,8808	38,1483
12	10,1207	6,4476	42	35,4224	22,5666	72	60,7242	38,6856
13	10,9641	6,9849	43	36,2658	23,1039	73	61,5676	39,2229
14	11,8075	7,5222	44	37,1092	23,6412	74	62,4110	39,7602
15	12,6509	8,0595	45	37,9526	24,1785	75	63,2544	40,2975
16	13,4943	8,5968	46	38,7960	24,7158	76	64,0978	40,8348
17	14,3377	9,1341	47	39,6394	25,2531	77	64,9411	41,3721
18	15,1810	9,6714	48	40,4828	25,7904	78	65,7845	41,9094
19	16,0244	10,2087	49	41,3262	26,3277	79	66,6279	42,4467
20	16,8678	10,7460	50	42,1696	26,8650	80	67,4713	42,9840
21	17,7112	11,2833	51	43,0130	27,4023	81	68,3147	43,5213
22	18,5546	11,8206	52	43,8564	27,9396	82	69,1581	44,0586
23	19,3980	12,3579	53	44,6997	28,4769	83	70,0015	44,5959
24	20,2414	12,8952	54	45,5431	29,0142	84	70,8449	45,1332
25	21,0848	13,4325	55	46,3865	29,5515	85	71,6883	45,6705
26	21,9282	13,9698	56	47,2299	30,0888	86	72,5317	46,2078
27	22,7716	14,5071	57	48,0733	30,6261	87	73,3751	46,7451
28	23,6150	15,0444	58	48,9167	31,1634	88	74,2184	47,2824
29	24,4584	15,5817	59	49,7601	31,7007	89	75,0618	47,8197
30	25,3017	16,1190	60	50,6035	32,2380	90	75,9052	48,3570
31	26,1451	16,6563	61	51,4469	32,7753	91	76,7486	48,8943
32	26,9885	17,1936	62	52,2903	33,3126	92	77,5920	49,4316
33	27,8319	17,7309	63	53,1337	33,8499	93	78,4354	49,9689
34	28,6753	18,2682	64	53,9771	34,3872	94	79,2788	50,5062
35	29,5187	18,8055	65	54,8204	34,9245	95	80,1222	51,0435
36	30,3621	19,3428	66	55,6638	35,4618	96	80,9656	51,5808
37	31,2055	19,8801	67	56,5072	35,9991	97	81,8090	52,1181
38	32,0489	20,4174	68	57,3506	36,5364	98	82,6524	52,6554
39	32,8923	20,9547	69	58,1940	37,0737	99	83,4958	53,1927
R	y	x	R	y	x	R	y	x

57° 30′

33°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	8,3867	5,4464	40	33,5468	21,7856	70	58,7069	38,1247
11	9,2254	5,9910	41	34,3855	22,3302	71	59,5456	38,6694
12	10,0640	6,5357	42	35,2242	22,8748	72	60,3843	39,2140
13	10,9027	7,0803	43	36,0628	23,4195	73	61,2230	39,7586
14	11,7414	7,6249	44	36,9015	23,9641	74	62,0616	40,3033
15	12,5801	8,1696	45	37,7402	24,5088	75	62,9003	40,8479
16	13,4187	8,7142	46	38,5788	25,0534	76	63,7390	41,3926
17	14,2574	9,2589	47	39,4175	25,5980	77	64,5776	41,9372
18	15,0961	9,8035	48	40,2562	26,1427	78	65,4163	42,4818
19	15,9347	10,3481	49	41,0949	26,6873	79	66,2550	43,0265
20	16,7734	10,8928	50	41,9335	27,2320	80	67,0936	43,5711
21	17,6121	11,4374	51	42,7722	27,7766	81	67,9323	44,1158
22	18,4508	11,9821	52	43,6109	28,3212	82	68,7710	44,6604
23	19,2894	12,5267	53	44,4495	28,8659	83	69,6097	45,2050
24	20,1281	13,0713	54	45,2882	29,4105	84	70,4483	45,7497
25	20,9668	13,6160	55	46,1269	29,9551	85	71,2870	46,2943
26	21,8054	14,1606	56	46,9656	30,4998	86	72,1257	46,8390
27	22,6441	14,7053	57	47,8042	31,0444	87	72,9643	47,3836
28	23,4828	15,2499	58	48,6429	31,5891	88	73,8030	47,9282
29	24,3214	15,7945	59	49,4816	32,1337	89	74,6417	48,4729
30	25,1601	16,3392	60	50,3202	32,6783	90	75,4804	49,0175
31	25,9988	16,8838	61	51,1589	33,2230	91	76,3190	49,5622
32	26,8375	17,4284	62	51,9976	33,7676	92	77,1577	50,1068
33	27,6761	17,9731	63	52,8362	34,3123	93	77,9964	50,6514
34	28,5148	18,5177	64	53,6749	34,8569	94	78,8350	51,1961
35	29,3535	19,0624	65	54,5136	35,4015	95	79,6737	51,7407
36	30,1921	19,6070	66	55,3523	35,9462	96	80,5124	52,2853
37	31,0308	20,1516	67	56,1909	36,4908	97	81,3510	52,8300
38	31,8695	20,6963	68	57,0296	37,0355	98	82,1897	53,3746
39	32,7082	21,2409	69	57,8683	37,5801	99	83,0284	53,9193
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

57°

33° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	8,3389	5,5194	40	33,3554	22,0775	70	58,3720	38,6356
11	9,1727	6,0713	41	34,1893	22,6294	71	59,2059	39,1875
12	10,0066	6,6232	42	35,0232	23,1814	72	60,0398	39,7395
13	10,8405	7,1752	43	35,8571	23,7333	73	60,8737	40,2914
14	11,6744	7,7271	44	36,6910	24,2852	74	61,7076	40,8433
15	12,5083	8,2791	45	37,5249	24,8372	75	62,5414	41,3953
16	13,3422	8,8310	46	38,3587	25,3891	76	63,3753	41,9472
17	14,1761	9,3829	47	39,1926	25,9410	77	64,2092	42,4991
18	15,0099	9,9349	48	40,0265	26,4930	78	65,0431	43,0511
19	15,8438	10,4868	49	40,8604	27,0449	79	65,8770	43,6030
20	16,6777	11,0387	50	41,6943	27,5968	80	66,7109	44,1550
21	17,5116	11,5907	51	42,5282	28,1488	81	67,5448	44,7069
22	18,3455	12,1426	52	43,3621	28,7007	82	68,3786	45,2588
23	19,1794	12,6946	53	44,1959	29,2527	83	69,2125	45,8108
24	20,0133	13,2465	54	45,0298	29,8046	84	70,0464	46,3627
25	20,8471	13,7984	55	45,8637	30,3565	85	70,8803	46,9146
26	21,6810	14,3504	56	46,6976	30,9085	86	71,7142	47,4666
27	22,5149	14,9023	57	47,5315	31,4604	87	72,5481	48,0185
28	23,3488	15,4542	58	48,3654	32,0123	88	73,3820	48,5705
29	24,1827	16,0062	59	49,1993	32,5643	89	74,2158	49,1224
30	25,0166	16,5581	60	50,0331	33,1162	90	75,0497	49,6743
31	25,8505	17,1100	61	50,8670	33,6682	91	75,8836	50,2263
32	26,6843	17,6620	62	51,7009	34,2201	92	76,7175	50,7782
33	27,5182	18,2139	63	52,5348	34,7720	93	77,5514	51,3301
34	28,3521	18,7659	64	53,3687	35,3240	94	78,3853	51,8821
35	29,1860	19,3178	65	54,2026	35,8759	95	79,2192	52,4340
36	30,0199	19,8697	66	55,0365	36,4278	96	80,0530	52,9860
37	30,8538	20,4217	67	55,8703	36,9798	97	80,8869	53,5379
38	31,6877	20,9736	68	56,7042	37,5317	98	81,7208	54,0898
39	32,5215	21,5255	69	57,5381	38,0837	99	82,5547	54,6418
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

56° 30′

34°

R	x	y	R	x	y	R	x	y
10	8,2904	5,5919	40	33,1615	22,3677	70	58,0326	39,1435
11	9,1194	6,1511	41	33,9905	22,9269	71	58,8617	39,7027
12	9,9485	6,7103	42	34,8196	23,4861	72	59,6907	40,2619
13	10,7775	7,2695	43	35,6486	24,0453	73	60,5197	40,8211
14	11,6065	7,8287	44	36,4777	24,6045	74	61,3488	41,3803
15	12,4356	8,3879	45	37,3067	25,1637	75	62,1778	41,9395
16	13,2646	8,9471	46	38,1357	25,7229	76	63,0069	42,4987
17	14,0936	9,5063	47	38,9648	26,2821	77	63,8359	43,0579
18	14,9227	10,0655	48	39,7938	26,8413	78	64,6649	43,6170
19	15,7517	10,6247	49	40,6228	27,4005	79	65,4940	44,1762
20	16,5808	11,1839	50	41,4519	27,9596	80	66,3230	44,7354
21	17,4098	11,7431	51	42,2809	28,5188	81	67,1520	45,2946
22	18,2388	12,3022	52	43,1100	29,0780	82	67,9811	45,8538
23	19,0679	12,8614	53	43,9390	29,6372	83	68,8101	46,4130
24	19,8969	13,4206	54	44,7680	30,1964	84	69,6392	46,9722
25	20,7259	13,9798	55	45,5971	30,7556	85	70,4682	47,5314
26	21,5550	14,5390	56	46,4261	31,3148	86	71,2972	48,0906
27	22,3840	15,0982	57	47,2551	31,8740	87	72,1263	48,6498
28	23,2131	15,6574	58	48,0842	32,4332	88	72,9553	49,2090
29	24,0421	16,2166	59	48,9132	32,9924	89	73,7843	49,7682
30	24,8711	16,7758	60	49,7423	33,5516	90	74,6134	50,3274
31	25,7002	17,3350	61	50,5713	34,1108	91	75,4424	50,8866
32	26,5292	17,8942	62	51,4003	34,6700	92	76,2715	51,4457
33	27,3582	18,4534	63	52,2294	35,2292	93	77,1005	52,0049
34	28,1873	19,0126	64	53,0584	35,7883	94	77,9295	52,5641
35	29,0163	19,5718	65	53,8874	36,3475	95	78,7586	53,1233
36	29,8454	20,1309	66	54,7165	36,9067	96	79,5876	53,6825
37	30,6744	20,6901	67	55,5455	37,4659	97	80,4166	54,2417
38	31,5034	21,2493	68	56,3746	38,0251	98	81,2457	54,8009
39	32,3325	21,8085	69	57,2036	38,5843	99	82,0747	55,3601
R	y	x	R	y	x	R	y	x

56°

34° 30′

R	x	y	R	x	y	R	x	y
10	8,2413	5,6641	40	32,9650	22,6562	70	57,6888	39,6484
11	9,0654	6,2305	41	33,7892	23,2227	71	58,5130	40,2148
12	9,8895	6,7969	42	34,6133	23,7891	72	59,3371	40,7812
13	10,7136	7,3633	43	35,4374	24,3555	73	60,1612	41,3477
14	11,5378	7,9297	44	36,2616	24,9219	74	60,9853	41,9141
15	12,3619	8,4961	45	37,0857	25,4883	75	61,8095	42,4805
16	13,1860	9,0625	46	37,9098	26,0547	76	62,6336	43,0469
17	14,0101	9,6289	47	38,7339	26,6211	77	63,4577	43,6133
18	14,8343	10,1953	48	39,5581	27,1875	78	64,2818	44,1797
19	15,6584	10,7617	49	40,3822	27,7539	79	65,1060	44,7461
20	16,4825	11,3281	50	41,2063	28,3203	80	65,9301	45,3125
21	17,3066	11,8945	51	42,0304	28,8867	81	66,7542	45,8789
22	18,1308	12,4609	52	42,8546	29,4531	82	67,5783	46,4453
23	18,9549	13,0273	53	43,6787	30,0195	83	68,4025	47,0117
24	19,7790	13,5937	54	44,5028	30,5859	84	69,2266	47,5781
25	20,6032	14,1602	55	45,3269	31,1523	85	70,0507	48,1445
26	21,4273	14,7266	56	46,1511	31,7187	86	70,8749	48,7109
27	22,2514	15,2930	57	46,9752	32,2852	87	71,6990	49,2773
28	23,0755	15,8594	58	47,7993	32,8516	88	72,5231	49,8437
29	23,8997	16,4258	59	48,6234	33,4180	89	73,3472	50,4102
30	24,7238	16,9922	60	49,4476	33,9844	90	74,1714	50,9766
31	25,5479	17,5586	61	50,2717	34,5508	91	74,9955	51,5430
32	26,3720	18,1250	62	51,0958	35,1172	92	75,8196	52,1094
33	27,1962	18,6914	63	51,9199	35,6836	93	76,6437	52,6758
34	28,0203	19,2578	64	52,7441	36,2500	94	77,4679	53,2422
35	28,8444	19,8242	65	53,5682	36,8164	95	78,2920	53,8086
36	29,6685	20,3906	66	54,3923	37,3828	96	79,1161	54,3750
37	30,4927	20,9570	67	55,2165	37,9492	97	79,9402	54,9414
38	31,3168	21,5234	68	56,0406	38,5156	98	80,7644	55,5078
39	32,1409	22,0898	69	56,8647	39,0820	99	81,5885	56,0742
R	y	x	R	y	x	R	y	x

55° 30′

35°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	8,1915	5,7358	40	32,7661	22,9431	70	57,3406	40,1504
11	9,0107	6,3093	41	33,5852	23,5166	71	58,1598	40,7239
12	9,8298	6,8829	42	34,4044	24,0902	72	58,9789	41,2975
13	10,6490	7,4565	43	35,2235	24,6638	73	59,7981	41,8711
14	11,4681	8,0301	44	36,0427	25,2374	74	60,6173	42,4447
15	12,2873	8,6036	45	36,8618	25,8109	75	61,4364	43,0182
16	13,1064	9,1772	46	37,6810	26,3845	76	62,2556	43,5918
17	13,9256	9,7508	47	38,5001	26,9581	77	63,0747	44,1654
18	14,7447	10,3244	48	39,3193	27,5317	78	63,8939	44,7390
19	15,5639	10,8980	49	40,1384	28,1052	79	64,7130	45,3125
20	16,3830	11,4715	50	40,9576	28,6788	80	65,5322	45,8861
21	17,2022	12,0451	51	41,7768	29,2524	81	66,3513	46,4597
22	18,0213	12,6187	52	42,5959	29,8260	82	67,1705	47,0333
23	18,8405	13,1923	53	43,4151	30,3996	83	67,9896	47,6068
24	19,6596	13,7658	54	44,2342	30,9731	84	68,8088	48,1804
25	20,4788	14,3394	55	45,0534	31,5467	85	69,6279	48,7540
26	21,2980	14,9130	56	45,8725	32,1203	86	70,4471	49,3276
27	22,1171	15,4866	57	46,6917	32,6939	87	71,2662	49,9012
28	22,9363	16,0601	58	47,5108	33,2674	88	72,0854	50,4747
29	23,7554	16,6337	59	48,3300	33,8410	89	72,9045	51,0483
30	24,5746	17,2073	60	49,1491	34,4146	90	73,7237	51,6219
31	25,3937	17,7809	61	49,9683	34,9882	91	74,5428	52,1955
32	26,2129	18,3544	62	50,7874	35,5617	92	75,3620	52,7690
33	27,0320	18,9280	63	51,6065	36,1353	93	76,1811	53,3426
34	27,8512	19,5016	64	52,4257	36,7089	94	77,0003	53,9162
35	28,6703	20,0752	65	53,2449	37,2825	95	77,8194	54,4898
36	29,4895	20,6488	66	54,0640	37,8560	96	78,6386	55,0633
37	30,3086	21,2223	67	54,8832	38,4296	97	79,4577	55,6369
38	31,1278	21,7959	68	55,7023	39,0032	98	80,2769	56,2105
39	31,9469	22,3695	69	56,5215	39,5768	99	81,0961	56,7841
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

55°

35° 30′

R	x	y	R	x	y	R	x	y
10	8,1412	5,8070	40	32,5646	23,2281	70	56,9881	40,6492
11	8,9553	6,3877	41	33,3787	23,8088	71	57,8022	41,2299
12	9,7694	6,9684	42	34,1929	24,3895	72	58,6163	41,8106
13	10,5835	7,5491	43	35,0070	24,9702	73	59,4304	42,3913
14	11,3976	8,1298	44	35,8211	25,5509	74	60,2445	42,9720
15	12,2117	8,7105	45	36,6352	26,1316	75	61,0587	43,5527
16	13,0258	9,2912	46	37,4493	26,7123	76	61,8728	44,1334
17	13,8400	9,8720	47	38,2634	27,2930	77	62,6869	44,7141
18	14,6541	10,4527	48	39,0775	27,8737	78	63,5010	45,2948
19	15,4682	11,0334	49	39,8917	28,4544	79	64,3151	45,8755
20	16,2823	11,6141	50	40,7058	29,0351	80	65,1292	46,4562
21	17,0964	12,1948	51	41,5199	29,6159	81	65,9434	47,0369
22	17,9105	12,7755	52	42,3340	30,1966	82	66,7575	47,6176
23	18,7247	13,3562	53	43,1481	30,7773	83	67,5716	48,1983
24	19,5388	13,9369	54	43,9622	31,3580	84	68,3857	48,7790
25	20,3529	14,5176	55	44,7764	31,9387	85	69,1998	49,3598
26	21,1670	15,0983	56	45,5905	32,5194	86	70,0139	49,9405
27	21,9811	15,6790	57	46,4046	33,1001	87	70,8281	50,5212
28	22,7952	16,2597	58	47,2187	33,6808	88	71,6422	51,1019
29	23,6094	16,8404	59	48,0328	34,2615	89	72,4563	51,6826
30	24,4235	17,4211	60	48,8469	34,8422	90	73,2704	52,2633
31	25,2376	18,0018	61	49,6610	35,4229	91	74,0845	52,8440
32	26,0517	18,5825	62	50,4752	36,0036	92	74,8986	53,4247
33	26,8658	19,1632	63	51,2893	36,5843	93	75,7127	54,0054
34	27,6799	19,7439	64	52,1034	37,1650	94	76,5269	54,5861
35	28,4940	20,3246	65	52,9175	37,7457	95	77,3410	55,1668
36	29,3082	20,9053	66	53,7316	38,3264	96	78,1551	55,7475
37	30,1223	21,4860	67	54,5457	38,9071	97	78,9692	56,3282
38	30,9364	22,0667	68	55,3599	39,4878	98	79,7833	56,9089
39	31,7505	22,6474	69	56,1740	40,0685	99	80,5974	57,4896
R	y	x	R	y	x	R	y	x

54° 30′

36°

R	x	y	R	x	y	R	x	y
10	8,0902	5,8779	40	32,3607	23,5114	70	56,6312	41,1450
11	8,8992	6,4656	41	33,1697	24,0992	71	57,4402	41,7328
12	9,7082	7,0534	42	33,9787	24,6870	72	58,2492	42,3205
13	10,5172	7,6412	43	34,7877	25,2748	73	59,0582	42,9083
14	11,3262	8,2290	44	35,5967	25,8626	74	59,8673	43,4961
15	12,1353	8,8168	45	36,4058	26,4503	75	60,6763	44,0839
16	12,9443	9,4046	46	37,2148	27,0381	76	61,4853	44,6717
17	13,7533	9,9923	47	38,0238	27,6259	77	62,2943	45,2595
18	14,5623	10,5801	48	38,8328	28,2137	78	63,1033	45,8472
19	15,3713	11,1679	49	39,6418	28,8015	79	63,9123	46,4350
20	16,1803	11,7557	50	40,4508	29,3893	80	64,7214	47,0228
21	16,9894	12,3435	51	41,2599	29,9770	81	65,5304	47,6106
22	17,7984	12,9313	52	42,0689	30,5648	82	66,3394	48,1984
23	18,6074	13,5191	53	42,8779	31,1526	83	67,1484	48,7862
24	19,4164	14,1068	54	43,6869	31,7404	84	67,9574	49,3740
25	20,2254	14,6946	55	44,4959	32,3282	85	68,7664	49,9617
26	21,0344	15,2824	56	45,3050	32,9160	86	69,5755	50,5495
27	21,8435	15,8702	57	46,1140	33,5038	87	70,3845	51,1373
28	22,6525	16,4580	58	46,9230	34,0915	88	71,1935	51,7251
29	23,4615	17,0458	59	47,7320	34,6793	89	72,0025	52,3129
30	24,2705	17,6336	60	48,5410	35,2671	90	72,8115	52,9007
31	25,0795	18,2213	61	49,3500	35,8549	91	73,6205	53,4885
32	25,8885	18,8091	62	50,1591	36,4427	92	74,4296	54,0762
33	26,6976	19,3969	63	50,9681	37,0305	93	75,2386	54,6640
34	27,5066	19,9847	64	51,7771	37,6183	94	76,0476	55,2518
35	28,3156	20,5725	65	52,5861	38,2060	95	76,8566	55,8396
36	29,1246	21,1603	66	53,3951	38,7938	96	77,6656	56,4274
37	29,9336	21,7481	67	54,2041	39,3816	97	78,4746	57,0152
38	30,7426	22,3358	68	55,0132	39,9694	98	79,2837	57,6030
39	31,5517	22,9236	69	55,8222	40,5572	99	80,0927	58,1907
R	y	x	R	y	x	R	y	x

54°

36° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	8,0386	5,9482	40	32,1543	23,7929	70	56,2700	41,6376
11	8,8424	6,5431	41	32,9581	24,3877	71	57,0738	42,2324
12	9,6463	7,1379	42	33,7620	24,9826	72	57,8777	42,8272
13	10,4501	7,7327	43	34,5658	25,5774	73	58,6816	43,4221
14	11,2540	8,3275	44	35,3697	26,1722	74	59,4854	44,0169
15	12,0579	8,9223	45	36,1736	26,7670	75	60,2893	44,6117
16	12,8617	9,5172	46	36,9774	27,3618	76	61,0931	45,2065
17	13,6656	10,1120	47	37,7813	27,9567	77	61,8970	45,8014
18	14,4694	10,7068	48	38,5851	28,5515	78	62,7008	46,3962
19	15,2733	11,3016	49	39,3890	29,1463	79	63,5047	46,9910
20	16,0771	11,8965	50	40,1928	29,7411	80	64,3085	47,5858
21	16,8810	12,4913	51	40,9967	30,3360	81	65,1124	48,1806
22	17,6849	13,0861	52	41,8006	30,9308	82	65,9163	48,7755
23	18,4887	13,6809	53	42,6044	31,5256	83	66,7201	49,3703
24	19,2926	14,2757	54	43,4083	32,1204	84	67,5240	49,9651
25	20,0964	14,8706	55	44,2121	32,7153	85	68,3278	50,5599
26	20,9003	15,4654	56	45,0160	33,3101	86	69,1317	51,1548
27	21,7041	16,0602	57	45,8198	33,9049	87	69,9355	51,7496
28	22,5080	16,6550	58	46,6237	34,4997	88	70,7394	52,3444
29	23,3118	17,2499	59	47,4276	35,0945	89	71,5433	52,9392
30	24,1157	17,8447	60	48,2314	35,6894	90	72,3471	53,5341
31	24,9196	18,4395	61	49,0353	36,2842	91	73,1510	54,1289
32	25,7234	19,0343	62	49,8391	36,8790	92	73,9548	54,7237
33	26,5273	19,6292	63	50,6430	37,4738	93	74,7587	55,3185
34	27,3311	20,2240	64	51,4468	38,0687	94	75,5625	55,9133
35	28,1350	20,8188	65	52,2507	38,6635	95	76,3664	56,5082
36	28,9388	21,4136	66	53,0546	39,2583	96	77,1703	57,1030
37	29,7427	22,0084	67	53,8584	39,8531	97	77,9741	57,6978
38	30,5466	22,6033	68	54,6623	40,4479	98	78,7780	58,2926
39	31,3504	23,1981	69	55,4661	41,0428	99	79,5818	58,8875
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

53° 30′

37°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	7,9864	6,0182	40	31,9454	24,0726	70	55,9045	42,1271
11	8,7850	6,6200	41	32,7441	24,6744	71	56,7031	42,7289
12	9,5836	7,2218	42	33,5427	25,2762	72	57,5018	43,3307
13	10,3823	7,8236	43	34,3413	25,8780	73	58,3004	43,9325
14	11,1809	8,4254	44	35,1400	26,4799	74	59,0990	44,5343
15	11,9795	9,0272	45	35,9386	27,0817	75	59,8977	45,1361
16	12,7782	9,6290	46	36,7372	27,6835	76	60,6963	45,7379
17	13,5768	10,2309	47	37,5359	28,2853	77	61,4949	46,3398
18	14,3754	10,8327	48	38,3345	28,8871	78	62,2936	46,9416
19	15,1741	11,4345	49	39,1331	29,4889	79	63,0922	47,5434
20	15,9727	12,0363	50	39,9318	30,0908	80	63,8908	48,1452
21	16,7713	12,6381	51	40,7304	30,6926	81	64,6895	48,7470
22	17,5700	13,2399	52	41,5290	31,2944	82	65,4881	49,3488
23	18,3686	13,8417	53	42,3277	31,8962	83	66,2867	49,9506
24	19,1673	14,4436	54	43,1263	32,4980	84	67,0854	50,5525
25	19,9659	15,0454	55	43,9250	33,0998	85	67,8840	51,1543
26	20,7645	15,6472	56	44,7236	33,7016	86	68,6827	51,7561
27	21,5632	16,2490	57	45,5222	34,3035	87	69,4813	52,3579
28	22,3618	16,8508	58	46,3209	34,9053	88	70,2799	52,9597
29	23,1604	17,4526	59	47,1195	35,5071	89	71,0786	53,5615
30	23,9591	18,0545	60	47,9181	36,1089	90	71,8772	54,1634
31	24,7577	18,6563	61	48,7168	36,7107	91	72,6758	54,7652
32	25,5563	19,2581	62	49,5154	37,3125	92	73,4745	55,3670
33	26,3550	19,8599	63	50,3140	37,9143	93	74,2731	55,9688
34	27,1536	20,4617	64	51,1127	38,5162	94	75,0717	56,5706
35	27,9522	21,0635	65	51,9113	39,1180	95	75,8704	57,1724
36	28,7509	21,6653	66	52,7099	39,7198	96	76,6690	57,7742
37	29,5495	22,2672	67	53,5086	40,3216	97	77,4676	58,3761
38	30,3481	22,8690	68	54,3072	40,9234	98	78,2663	58,9779
39	31,1468	23,4708	69	55,1059	41,5252	99	79,0649	59,5797
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

53°

37° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	7,9335	6,0876	40	31,7341	24,3505	70	55,5347	42,6133
11	8,7269	6,6964	41	32,5275	24,9592	71	56,3281	43,2221
12	9,5202	7,3051	42	33,3208	25,5680	72	57,1214	43,8308
13	10,3136	7,9139	43	34,1142	26,1767	73	57,9148	44,4396
14	11,1069	8,5227	44	34,9075	26,7855	74	58,7081	45,0483
15	11,9003	9,1314	45	35,7009	27,3943	75	59,5015	45,6571
16	12,6937	9,7402	46	36,4943	28,0030	76	60,2949	46,2659
17	13,4870	10,3489	47	37,2876	28,6118	77	61,0882	46,8746
18	14,2804	10,9577	48	38,0810	29,2205	78	61,8816	47,4834
19	15,0737	11,5665	49	38,8743	29,8293	79	62,6749	48,0922
20	15,8671	12,1752	50	39,6677	30,4381	80	63,4683	48,7009
21	16,6604	12,7840	51	40,4610	31,0468	81	64,2616	49,3097
22	17,4538	13,3928	52	41,2544	31,6556	82	65,0550	49,9184
23	18,2471	14,0015	53	42,0477	32,2644	83	65,8483	50,5272
24	19,0405	14,6103	54	42,8411	32,8731	84	66,6417	51,1360
25	19,8338	15,2190	55	43,6344	33,4819	85	67,4350	51,7447
26	20,6272	15,8278	56	44,4278	34,0906	86	68,2284	52,3535
27	21,4205	16,4366	57	45,2211	34,6994	87	69,0217	52,9622
28	22,2139	17,0453	58	46,0145	35,3082	88	69,8151	53,5710
29	23,0072	17,6541	59	46,8078	35,9169	89	70,6084	54,1798
30	23,8006	18,2628	60	47,6012	36,5257	90	71,4018	54,7885
31	24,5940	18,8716	61	48,3946	37,1344	91	72,1952	55,3973
32	25,3873	19,4804	62	49,1879	37,7432	92	72,9885	56,0061
33	26,1807	20,0891	63	49,9813	38,3520	93	73,7819	56,6148
34	26,9740	20,6979	64	50,7746	38,9607	94	74,5752	57,2236
35	27,7674	21,3067	65	51,5680	39,5695	95	75,3686	57,8323
36	28,5607	21,9154	66	52,3613	40,1783	96	76,1619	58,4411
37	29,3541	22,5242	67	53,1547	40,7870	97	76,9553	59,0499
38	30,1474	23,1329	68	53,9480	41,3958	98	77,7486	59,6586
39	30,9408	23,7417	69	54,7414	42,0045	99	78,5420	60,2674
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

52° 30′

38°

R	x	y	R	x	y	R	x	y
10	7,8801	6,1566	40	31,5204	24,6265	70	55,1608	43,0963
11	8,6681	6,7723	41	32,3084	25,2421	71	55,9488	43,7120
12	9,4561	7,3879	42	33,0965	25,8578	72	56,7368	44,3276
13	10,2441	8,0036	43	33,8845	26,4734	73	57,5248	44,9433
14	11,0322	8,6193	44	34,6725	27,0891	74	58,3128	45,5589
15	11,8202	9,2349	45	35,4605	27,7048	75	59,1008	46,1746
16	12,6082	9,8506	46	36,2485	28,3204	76	59,8888	46,7903
17	13,3962	10,4662	47	37,0365	28,9361	77	60,6768	47,4059
18	14,1842	11,0819	48	37,8245	29,5518	78	61,4648	48,0216
19	14,9722	11,6976	49	38,6125	30,1674	79	62,2528	48,6373
20	15,7602	12,3132	50	39,4005	30,7831	80	63,0409	49,2529
21	16,5482	12,9289	51	40,1885	31,3987	81	63,8289	49,8686
22	17,3362	13,5446	52	40,9766	32,0144	82	64,6169	50,4842
23	18,1242	14,1602	53	41,7646	32,6301	83	65,4049	51,0999
24	18,9123	14,7759	54	42,5526	33,2457	84	66,1929	51,7156
25	19,7003	15,3915	55	43,3406	33,8614	85	66,9809	52,3312
26	20,4883	16,0072	56	44,1286	34,4770	86	67,7689	52,9469
27	21,2763	16,6229	57	44,9166	35,0927	87	68,5569	53,5625
28	22,0643	17,2385	58	45,7046	35,7084	88	69,3449	54,1782
29	22,8523	17,8542	59	46,4926	36,3240	89	70,1330	54,7939
30	23,6403	18,4698	60	47,2806	36,9397	90	70,9210	55,4095
31	24,4283	19,0855	61	48,0687	37,5554	91	71,7090	56,0252
32	25,2163	19,7012	62	48,8567	38,1710	92	72,4970	56,6409
33	26,0044	20,3168	63	49,6447	38,7867	93	73,2850	57,2565
34	26,7924	20,9325	64	50,4327	39,4023	94	74,0730	57,8722
35	27,5804	21,5482	65	51,2207	40,0180	95	74,8610	58,4878
36	28,3684	22,1638	66	52,0087	40,6337	96	75,6490	59,1035
37	29,1564	22,7795	67	52,7967	41,2493	97	76,4370	59,7192
38	29,9444	23,3951	68	53,5847	41,8650	98	77,2251	60,3348
39	30,7324	24,0108	69	54,3727	42,4806	99	78,0131	60,9505
R	y	x	R	y	x	R	y	x

52°

38° 30′

R	x	y	R	x	y	R	x	y
10	7,8261	6,2251	40	31,3043	24,9006	70	54,7826	43,5760
11	8,6087	6,8477	41	32,0869	25,5231	71	55,5652	44,1985
12	9,3913	7,4702	42	32,8695	26,1456	72	56,3478	44,8211
13	10,1739	8,0927	43	33,6522	26,7681	73	57,1304	45,4436
14	10,9565	8,7152	44	34,4348	27,3906	74	57,9130	46,0661
15	11,7391	9,3377	45	35,2174	28,0132	75	58,6956	46,6886
16	12,5217	9,9602	46	36,0000	28,6357	76	59,4782	47,3111
17	13,3043	10,5827	47	36,7826	29,2582	77	60,2608	47,9336
18	14,0869	11,2053	48	37,5652	29,8807	78	61,0434	48,5561
19	14,8696	11,8278	49	38,3478	30,5032	79	61,8260	49,1787
20	15,6522	12,4503	50	39,1304	31,1257	80	62,6087	49,8012
21	16,4348	13,0728	51	39,9130	31,7482	81	63,3913	50,4237
22	17,2174	13,6953	52	40,6956	32,3708	82	64,1739	51,0462
23	18,0000	14,3178	53	41,4782	32,9933	83	64,9565	51,6687
24	18,7826	14,9404	54	42,2608	33,6158	84	65,7391	52,2912
25	19,5652	15,5629	55	43,0434	34,2383	85	66,5217	52,9137
26	20,3478	16,1854	56	43,8261	34,8608	86	67,3043	53,5363
27	21,1304	16,8079	57	44,6087	35,4833	87	68,0869	54,1588
28	21,9130	17,4304	58	45,3913	36,1058	88	68,8695	54,7813
29	22,6956	18,0529	59	46,1739	36,7284	89	69,6521	55,4038
30	23,4782	18,6754	60	46,9565	37,3509	90	70,4347	56,0263
31	24,2609	19,2980	61	47,7391	37,9734	91	71,2173	56,6488
32	25,0435	19,9205	62	48,5217	38,5959	92	72,0000	57,2713
33	25,8261	20,5430	63	49,3043	39,2184	93	72,7826	57,8939
34	26,6087	21,1655	64	50,0869	39,8409	94	73,5652	58,5164
35	27,3913	21,7880	65	50,8695	40,4635	95	74,3478	59,1389
36	28,1739	22,4105	66	51,6521	41,0860	96	75,1304	59,7614
37	28,9565	23,0330	67	52,4347	41,7085	97	75,9130	60,3839
38	29,7391	23,6556	68	53,2174	42,3310	98	76,6956	61,0064
39	30,5217	24,2781	69	54,0000	42,9535	99	77,4782	61,6289
R	y	x	R	y	x	R	y	x

51° 30′

39°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	7,7715	6,2932	40	31,0858	25,1728	70	54,4002	44,0524
11	8,5486	6,9225	41	31,8630	25,8021	71	55,1774	44,6817
12	9,3258	7,5518	42	32,6401	26,4315	72	55,9545	45,3111
13	10,1029	8,1812	43	33,4173	27,0608	73	56,7317	45,9404
14	10,8800	8,8105	44	34,1944	27,6901	74	57,5088	46,5697
15	11,6572	9,4398	45	34,9716	28,3194	75	58,2859	47,1990
16	12,4343	10,0691	46	35,7487	28,9487	76	59,0631	47,8283
17	13,2115	10,6984	47	36,5259	29,5781	77	59,8402	48,4577
18	13,9886	11,3278	48	37,3030	30,2074	78	60,6174	49,0870
19	14,7658	11,9571	49	38,0802	30,8367	79	61,3945	49,7163
20	15,5429	12,5864	50	38,8573	31,4660	80	62,1717	50,3456
21	16,3201	13,2157	51	39,6344	32,0953	81	62,9488	50,9750
22	17,0972	13,8450	52	40,4116	32,7247	82	63,7260	51,6043
23	17,8744	14,4744	53	41,1887	33,3540	83	64,5031	52,2336
24	18,6515	15,1037	54	41,9659	33,9833	84	65,2803	52,8629
25	19,4286	15,7330	55	42,7430	34,6126	85	66,0574	53,4922
26	20,2058	16,3623	56	43,5202	35,2419	86	66,8346	54,1216
27	20,9829	16,9917	57	44,2973	35,8713	87	67,6117	54,7509
28	21,7601	17,6210	58	45,0745	36,5006	88	68,3888	55,3802
29	22,5372	18,2503	59	45,8516	37,1299	89	69,1660	56,0095
30	23,3144	18,8796	60	46,6288	37,7592	90	69,9431	56,6388
31	24,0915	19,5089	61	47,4059	38,3885	91	70,7203	57,2682
32	24,8687	20,1383	62	48,1830	39,0179	92	71,4974	57,8975
33	25,6458	20,7676	63	48,9602	39,6472	93	72,2746	58,5268
34	26,4230	21,3969	64	49,7373	40,2765	94	73,0517	59,1561
35	27,2001	22,0262	65	50,5145	40,9058	95	73,8289	59,7854
36	27,9773	22,6555	66	51,2916	41,5351	96	74,6060	60,4148
37	28,7544	23,2849	67	52,0688	42,1645	97	75,3832	61,0441
38	29,5315	23,9142	68	52,8459	42,7938	98	76,1603	61,6734
39	30,3087	24,5435	69	53,6231	43,4231	99	76,9375	62,3027
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

51°

39° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	7,7162	6,3608	40	30,8650	25,4431	70	54,0137	44,5255
11	8,4879	6,9969	41	31,6366	26,0792	71	54,7853	45,1616
12	9,2595	7,6329	42	32,4082	26,7153	72	55,5570	45,7976
13	10,0311	8,2690	43	33,1799	27,3514	73	56,3286	46,4337
14	10,8027	8,9051	44	33,9515	27,9874	74	57,1002	47,0698
15	11,5744	9,5412	45	34,7231	28,6235	75	57,8718	47,7059
16	12,3460	10,1773	46	35,4947	29,2596	76	58,6435	48,3419
17	13,1176	10,8133	47	36,2664	29,8957	77	59,4151	48,9780
18	13,8892	11,4494	48	37,0380	30,5318	78	60,1867	49,6141
19	14,6609	12,0855	49	37,8096	31,1678	79	60,9583	50,2502
20	15,4325	12,7216	50	38,5812	31,8039	80	61,7300	50,8863
21	16,2041	13,3576	51	39,3529	32,4400	81	62,5016	51,5223
22	16,9757	13,9937	52	40,1245	33,0761	82	63,2732	52,1584
23	17,7474	14,6298	53	40,8961	33,7121	83	64,0448	52,7945
24	18,5190	15,2659	54	41,6677	34,3482	84	64,8165	53,4306
25	19,2906	15,9020	55	42,4394	34,9843	85	65,5881	54,0666
26	20,0622	16,5380	56	43,2110	35,6204	86	66,3597	54,7027
27	20,8339	17,1741	57	43,9826	36,2565	87	67,1313	55,3388
28	21,6055	17,8102	58	44,7542	36,8925	88	67,9030	55,9749
29	22,3771	18,4463	59	45,5259	37,5286	89	68,6746	56,6110
30	23,1487	19,0823	60	46,2975	38,1647	90	69,4462	57,2470
31	23,9204	19,7184	61	47,0691	38,8008	91	70,2178	57,8831
32	24,6920	20,3545	62	47,8407	39,4368	92	70,9895	58,5192
33	25,4636	20,9906	63	48,6123	40,0729	93	71,7611	59,1553
34	26,2352	21,6267	64	49,3840	40,7090	94	72,5327	59,7914
35	27,0069	22,2627	65	50,1556	41,3451	95	73,3043	60,4274
36	27,7785	22,8988	66	50,9272	41,9812	96	74,0760	61,0635
37	28,5501	23,5349	67	51,6988	42,6172	97	74,8476	61,6996
38	29,3217	24,1710	68	52,4705	43,2533	98	75,6192	62,3357
39	30,0934	24,8071	69	53,2421	43,8894	99	76,3908	62,9717
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

50° 30′

40°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	7,6604	6,4279	40	30,6418	25,7115	70	53,6231	44,9951
11	8,4265	7,0707	41	31,4078	26,3543	71	54,3892	45,6379
12	9,1925	7,7135	42	32,1739	26,9971	72	55,1552	46,2807
13	9,9586	8,3562	43	32,9399	27,6399	73	55,9212	46,9235
14	10,7246	8,9990	44	33,7060	28,2827	74	56,6873	47,5663
15	11,4907	9,6418	45	34,4720	28,9254	75	57,4533	48,2091
16	12,2567	10,2846	46	35,2380	29,5682	76	58,2194	48,8519
17	13,0228	10,9274	47	36,0041	30,2110	77	58,9854	49,4946
18	13,7888	11,5702	48	36,7701	30,8538	78	59,7515	50,1374
19	14,5548	12,2130	49	37,5362	31,4966	79	60,5175	50,7802
20	15,3209	12,8558	50	38,3022	32,1394	80	61,2836	51,4230
21	16,0869	13,4985	51	39,0683	32,7822	81	62,0496	52,0658
22	16,8530	14,1413	52	39,8343	33,4250	82	62,8156	52,7086
23	17,6190	14,7841	53	40,6004	34,0677	83	63,5817	53,3514
24	18,3851	15,4269	54	41,3664	34,7105	84	64,3477	53,9942
25	19,1511	16,0697	55	42,1324	35,3533	85	65,1138	54,6369
26	19,9172	16,7125	56	42,8985	35,9961	86	65,8798	55,2797
27	20,6832	17,3553	57	43,6645	36,6389	87	66,6459	55,9225
28	21,4492	17,9981	58	44,4306	37,2817	88	67,4119	56,5653
29	22,2153	18,6408	59	45,1966	37,9245	89	68,1780	57,2081
30	22,9813	19,2836	60	45,9627	38,5673	90	68,9440	57,8509
31	23,7474	19,9264	61	46,7287	39,2100	91	69,7100	58,4937
32	24,5134	20,5692	62	47,4948	39,8528	92	70,4761	59,1365
33	25,2795	21,2120	63	48,2608	40,4956	93	71,2421	59,7792
34	26,0455	21,8548	64	49,0268	41,1384	94	72,0082	60,4220
35	26,8116	22,4976	65	49,7929	41,7812	95	72,7742	61,0648
36	27,5776	23,1404	66	50,5589	42,4240	96	73,5403	61,7076
37	28,3436	23,7831	67	51,3250	43,0668	97	74,3063	62,3504
38	29,1097	24,4259	68	52,0910	43,7096	98	75,0724	62,9932
39	29,8757	25,0687	69	52,8571	44,3523	99	75,8384	63,6360
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

50°

40° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	7,6041	6,4945	40	30,4162	25,9779	70	53,2284	45,4614
11	8,3645	7,1439	41	31,1766	26,6274	71	53,9888	46,1108
12	9,1249	7,7934	42	31,9371	27,2768	72	54,7492	46,7603
13	9,8853	8,4428	43	32,6975	27,9263	73	55,5096	47,4097
14	10,6457	9,0923	44	33,4579	28,5757	74	56,2700	48,0592
15	11,4061	9,7417	45	34,2183	29,2252	75	57,0304	48,7086
16	12,1665	10,3912	46	34,9787	29,8746	76	57,7909	49,3581
17	12,9269	11,0406	47	35,7391	30,5241	77	58,5513	50,0075
18	13,6873	11,6901	48	36,4995	31,1735	78	59,3117	50,6569
19	14,4477	12,3395	49	37,2599	31,8230	79	60,0721	51,3064
20	15,2081	12,9890	50	38,0203	32,4724	80	60,8325	51,9558
21	15,9685	13,6384	51	38,7807	33,1219	81	61,5929	52,6053
22	16,7289	14,2879	52	39,5411	33,7713	82	62,3533	53,2547
23	17,4893	14,9373	53	40,3015	34,4207	83	63,1137	53,9042
24	18,2497	15,5868	54	41,0619	35,0702	84	63,8741	54,5536
25	19,0101	16,2362	55	41,8223	35,7196	85	64,6345	55,2031
26	19,7706	16,8856	56	42,5827	36,3691	86	65,3949	55,8525
27	20,5310	17,5351	57	43,3431	37,0185	87	66,1553	56,5020
28	21,2914	18,1845	58	44,1035	37,6680	88	66,9157	57,1514
29	22,0518	18,8340	59	44,8640	38,3174	89	67,6761	57,8009
30	22,8122	19,4834	60	45,6244	38,9669	90	68,4365	58,4503
31	23,5726	20,1329	61	46,3848	39,6163	91	69,1969	59,0998
32	24,3330	20,7823	62	47,1452	40,2658	92	69,9573	59,7492
33	25,0934	21,4318	63	47,9056	40,9152	93	70,7178	60,3987
34	25,8538	22,0812	64	48,6660	41,5647	94	71,4782	61,0481
35	26,6142	22,7307	65	49,4264	42,2141	95	72,2386	61,6976
36	27,3746	23,3801	66	50,1868	42,8636	96	72,9990	62,3470
37	28,1350	24,0296	67	50,9472	43,5130	97	73,7594	62,9965
38	28,8954	24,6790	68	51,7076	44,1625	98	74,5198	63,6459
39	29,6558	25,3285	69	52,4680	44,8119	99	75,2802	64,2954
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

49° 30′

41°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	7,5471	6,5606	40	30,1884	26,2424	70	52,8297	45,9241
11	8,3018	7,2166	41	30,9431	26,8984	71	53,5844	46,5802
12	9,0565	7,8727	42	31,6978	27,5545	72	54,3391	47,2363
13	9,8112	8,5288	43	32,4525	28,2105	73	55,0938	47,8923
14	10,5659	9,1848	44	33,2072	28,8666	74	55,8485	48,5484
15	11,3206	9,8409	45	33,9619	29,5227	75	56,6032	49,2044
16	12,0754	10,4969	46	34,7166	30,1787	76	57,3579	49,8605
17	12,8301	11,1530	47	35,4714	30,8348	77	58,1126	50,5165
18	13,5848	11,8091	48	36,2261	31,4908	78	58,8673	51,1726
19	14,3395	12,4651	49	36,9808	32,1469	79	59,6221	51,8287
20	15,0942	13,1212	50	37,7355	32,8030	80	60,3768	52,4847
21	15,8489	13,7772	51	38,4902	33,4590	81	61,1315	53,1408
22	16,6036	14,4333	52	39,2449	34,1151	82	61,8862	53,7968
23	17,3583	15,0894	53	39,9996	34,7711	83	62,6409	54,4529
24	18,1130	15,7454	54	40,7543	35,4272	84	63,3956	55,1090
25	18,8677	16,4015	55	41,5090	36,0832	85	64,1503	55,7650
26	19,6224	17,0575	56	42,2637	36,7393	86	64,9050	56,4211
27	20,3772	17,7136	57	43,0184	37,3954	87	65,6597	57,0771
28	21,1319	18,3697	58	43,7732	38,0514	88	66,4144	57,7332
29	21,8866	19,0257	59	44,5279	38,7075	89	67,1692	58,3893
30	22,6413	19,6818	60	45,2826	39,3635	90	67,9239	59,0453
31	23,3960	20,3378	61	46,0373	40,0196	91	68,6786	59,7014
32	24,1507	20,9939	62	46,7920	40,6757	92	69,4333	60,3574
33	24,9054	21,6499	63	47,5467	41,3317	93	70,1880	61,0135
34	25,6601	22,3060	64	48,3014	41,9878	94	70,9427	61,6695
35	26,4148	22,9621	65	49,0561	42,6438	95	71,6974	62,3256
36	27,1695	23,6181	66	49,8108	43,2999	96	72,4521	62,9817
37	27,9243	24,2742	67	50,5655	43,9560	97	73,2068	63,6377
38	28,6790	24,9302	68	51,3203	44,6120	98	73,9615	64,2938
39	29,4337	25,5863	69	52,0750	45,2681	99	74,7162	64,9498
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

49°

41° 30′

R	x	y	R	x	y	R	x	y
10	7,4896	6,6262	40	29,9582	26,5048	70	52,4269	46,3834
11	8,2385	7,2888	41	30,7072	27,1674	71	53,1759	47,0460
12	8,9875	7,9514	42	31,4561	27,8300	72	53,9248	47,7086
13	9,7364	8,6141	43	32,2051	28,4927	73	54,6738	48,3713
14	10,4854	9,2767	44	32,9541	29,1553	74	55,4227	49,0339
15	11,2343	9,9393	45	33,7030	29,8179	75	56,1717	49,6965
16	11,9833	10,6019	46	34,4520	30,4805	76	56,9206	50,3591
17	12,7322	11,2645	47	35,2009	31,1431	77	57,6696	51,0217
18	13,4812	11,9272	48	35,9499	31,8058	78	58,4185	51,6844
19	14,2302	12,5898	49	36,6988	32,4684	79	59,1675	52,3470
20	14,9791	13,2524	50	37,4478	33,1310	80	59,9165	53,0096
21	15,7281	13,9150	51	38,1967	33,7936	81	60,6654	53,6722
22	16,4770	14,5776	52	38,9457	34,4562	82	61,4144	54,3348
23	17,2260	15,2403	53	39,6947	35,1189	83	62,1633	54,9975
24	17,9749	15,9029	54	40,4436	35,7815	84	62,9123	55,6601
25	18,7239	16,5655	55	41,1926	36,4441	85	63,6612	56,3227
26	19,4728	17,2281	56	41,9415	37,1067	86	64,4102	56,9853
27	20,2218	17,8907	57	42,6905	37,7693	87	65,1591	57,6479
28	20,9708	18,5534	58	43,4394	38,4320	88	65,9081	58,3106
29	21,7197	19,2160	59	44,1884	39,0946	89	66,6571	58,9732
30	22,4687	19,8786	60	44,9373	39,7572	90	67,4060	59,6358
31	23,2176	20,5412	61	45,6863	40,4198	91	68,1550	60,2984
32	23,9666	21,2038	62	46,4353	41,0824	92	68,9039	60,9610
33	24,7155	21,8665	63	47,1842	41,7451	93	69,6529	61,6237
34	25,4645	22,5291	64	47,9332	42,4077	94	70,4018	62,2863
35	26,2135	23,1917	65	48,6821	43,0703	95	71,1508	62,9489
36	26,9624	23,8543	66	49,4311	43,7329	96	71,8997	63,6115
37	27,7114	24,5169	67	50,1800	44,3955	97	72,6487	64,2741
38	28,4603	25,1796	68	50,9290	45,0582	98	73,3977	64,9368
39	29,2093	25,8422	69	51,6779	45,7208	99	74,1466	65,5994
R	y	x	R	y	x	R	y	x

48° 30′

42°

R	x	y	R	x	y	R	x	y
10	7,4314	6,6913	40	29,7258	26,7652	70	52,0201	46,8391
11	8,1746	7,3604	41	30,4689	27,4344	71	52,7633	47,5083
12	8,9177	8,0296	42	31,2121	28,1035	72	53,5064	48,1774
13	9,6609	8,6987	43	31,9552	28,7726	73	54,2496	48,8465
14	10,4040	9,3678	44	32,6984	29,4417	74	54,9927	49,5157
15	11,1472	10,0370	45	33,4415	30,1109	75	55,7359	50,1848
16	11,8903	10,7061	46	34,1847	30,7800	76	56,4790	50,8539
17	12,6335	11,3752	47	34,9278	31,4491	77	57,2222	51,5231
18	13,3766	12,0444	48	35,6710	32,1183	78	57,9653	52,1922
19	14,1198	12,7135	49	36,4141	32,7874	79	58,7084	52,8613
20	14,8629	13,3826	50	37,1572	33,4565	80	59,4516	53,5304
21	15,6060	14,0517	51	37,9004	34,1257	81	60,1947	54,1996
22	16,3492	14,7209	52	38,6435	34,7948	82	60,9379	54,8687
23	17,0923	15,3900	53	39,3867	35,4639	83	61,6810	55,5378
24	17,8355	16,0591	54	40,1298	36,1331	84	62,4242	56,2070
25	18,5786	16,7283	55	40,8730	36,8022	85	63,1673	56,8761
26	19,3218	17,3974	56	41,6161	37,4713	86	63,9105	57,5452
27	20,0649	18,0665	57	42,3593	38,1404	87	64,6536	58,2144
28	20,8081	18,7357	58	43,1024	38,8096	88	65,3967	58,8835
29	21,5512	19,4048	59	43,8455	39,4787	89	66,1399	59,5526
30	22,2943	20,0739	60	44,5887	40,1478	90	66,8830	60,2218
31	23,0375	20,7430	61	45,3318	40,8170	91	67,6262	60,8909
32	23,7806	21,4122	62	46,0750	41,4861	92	68,3693	61,5600
33	24,5238	22,0813	63	46,8181	42,1552	93	69,1125	62,2291
34	25,2669	22,7504	64	47,5613	42,8244	94	69,8556	62,8983
35	26,0101	23,4196	65	48,3044	43,4935	95	70,5988	63,5674
36	26,7532	24,0887	66	49,0476	44,1626	96	71,3419	64,2365
37	27,4964	24,7578	67	49,7907	44,8318	97	72,0850	64,9057
38	28,2395	25,4270	68	50,5338	45,5009	98	72,8282	65,5748
39	28,9826	26,0961	69	51,2770	46,1700	99	73,5713	66,2439
R	y	x	R	y	x	R	y	x

48°

42° 30′

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	7,3728	6,7559	40	29,4911	27,0236	70	51,6094	47,2913
11	8,1101	7,4315	41	30,2284	27,6992	71	52,3467	47,9669
12	8,8473	8,1071	42	30,9656	28,3748	72	53,0840	48,6425
13	9,5846	8,7827	43	31,7029	29,0504	73	53,8212	49,3181
14	10,3219	9,4583	44	32,4402	29,7260	74	54,5585	49,9937
15	11,0592	10,1339	45	33,1775	30,4016	75	55,2958	50,6693
16	11,7964	10,8094	46	33,9148	31,0771	76	56,0331	51,3449
17	12,5337	11,4850	47	34,6520	31,7527	77	56,7704	52,0204
18	13,2710	12,1606	48	35,3893	32,4283	78	57,5076	52,6960
19	14,0083	12,8362	49	36,1266	33,1039	79	58,2449	53,3716
20	14,7455	13,5118	50	36,8639	33,7795	80	58,9822	54,0472
21	15,4828	14,1874	51	37,6011	34,4551	81	59,7195	54,7228
22	16,2201	14,8630	52	38,3384	35,1307	82	60,4567	55,3984
23	16,9574	15,5386	53	39,0757	35,8063	83	61,1940	56,0740
24	17,6947	16,2142	54	39,8130	36,4819	84	61,9313	56,7496
25	18,4319	16,8898	55	40,5503	37,1575	85	62,6686	57,4252
26	19,1692	17,5653	56	41,2875	37,8331	86	63,4059	58,1008
27	19,9065	18,2409	57	42,0248	38,5086	87	64,1431	58,7763
28	20,6438	18,9165	58	42,7621	39,1842	88	64,8804	59,4519
29	21,3810	19,5921	59	43,4994	39,8598	89	65,6177	60,1275
30	22,1183	20,2677	60	44,2366	40,5354	90	66,3550	60,8031
31	22,8556	20,9433	61	44,9739	41,2110	91	67,0922	61,4787
32	23,5929	21,6189	62	45,7112	41,8866	92	67,8295	62,1543
33	24,3302	22,2945	63	46,4485	42,5622	93	68,5668	62,8299
34	25,0674	22,9701	64	47,1857	43,2378	94	69,3041	63,5055
35	25,8047	23,6457	65	47,9230	43,9134	95	70,0413	64,1811
36	26,5420	24,3212	66	48,6603	44,5890	96	70,7786	64,8567
37	27,2793	24,9968	67	49,3976	45,2645	97	71,5159	65,5323
38	28,0165	25,6724	68	50,1349	45,9401	98	72,2532	66,2078
39	28,7538	26,3480	69	50,8721	46,6157	99	72,9905	66,8834
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

47° 30′

43°

R	x	y	R	x	y	R	x	y
10	7,3135	6,8200	40	29,2541	27,2799	70	51,1948	47,7399
11	8,0449	7,5020	41	29,9855	27,9619	71	51,9261	48,4219
12	8,7762	8,1840	42	30,7169	28,6439	72	52,6575	49,1039
13	9,5076	8,8660	43	31,4482	29,3259	73	53,3888	49,7859
14	10,2390	9,5480	44	32,1796	30,0079	74	54,1202	50,4679
15	10,9703	10,2300	45	32,9109	30,6899	75	54,8515	51,1499
16	11,7017	10,9120	46	33,6423	31,3719	76	55,5829	51,8319
17	12,4330	11,5940	47	34,3736	32,0539	77	56,3142	52,5139
18	13,1644	12,2760	48	35,1050	32,7359	78	57,0456	53,1959
19	13,8957	12,9580	49	35,8363	33,4179	79	57,7769	53,8779
20	14,6271	13,6400	50	36,5677	34,0999	80	58,5083	54,5599
21	15,3584	14,3220	51	37,2990	34,7819	81	59,2396	55,2419
22	16,0898	15,0040	52	38,0304	35,4639	82	59,9710	55,9239
23	16,8211	15,6860	53	38,7617	36,1459	83	60,7024	56,6059
24	17,5525	16,3680	54	39,4931	36,8279	84	61,4337	57,2879
25	18,2838	17,0500	55	40,2245	37,5099	85	62,1651	57,9699
26	19,0152	17,7320	56	40,9558	38,1919	86	62,8964	58,6519
27	19,7465	18,4140	57	41,6872	38,8739	87	63,6278	59,3339
28	20,4779	19,0960	58	42,4185	39,5559	88	64,3591	60,0159
29	21,2093	19,7780	59	43,1499	40,2379	89	65,0905	60,6979
30	21,9406	20,4600	60	43,8812	40,9199	90	65,8218	61,3799
31	22,6720	21,1419	61	44,6126	41,6019	91	66,5532	62,0619
32	23,4033	21,8239	62	45,3439	42,2839	92	67,2845	62,7438
33	24,1347	22,5059	63	46,0753	42,9659	93	68,0159	63,4258
34	24,8660	23,1879	64	46,8066	43,6479	94	68,7472	64,1078
35	25,5974	23,8699	65	47,5380	44,3299	95	69,4786	64,7898
36	26,3287	24,5519	66	48,2693	45,0119	96	70,2100	65,4718
37	27,0601	25,2339	67	49,0007	45,6939	97	70,9413	66,1538
38	27,7914	25,9159	68	49,7321	46,3759	98	71,6727	66,8358
39	28,5228	26,5979	69	50,4634	47,0579	99	72,4040	67,5178
R	y	x	R	y	x	R	y	x

47°

43° 30′

R	x	y	R	x	y	R	x	y
10	7,2537	6,8835	40	29,0150	27,5342	70	50,7762	48,1848
11	7,9791	7,5719	41	29,7403	28,2225	71	51,5016	48,8732
12	8,7045	8,2603	42	30,4657	28,9109	72	52,2270	49,5615
13	9,4299	8,9486	43	31,1911	29,5992	73	52,9523	50,2499
14	10,1552	9,6370	44	31,9165	30,2876	74	53,6777	50,9382
15	10,8806	10,3253	45	32,6418	30,9760	75	54,4031	51,6266
16	11,6060	11,0137	46	33,3672	31,6643	76	55,1285	52,3149
17	12,3314	11,7020	47	34,0926	32,3527	77	55,8538	53,0033
18	13,0567	12,3904	48	34,8180	33,0410	78	56,5792	53,6917
19	13,7821	13,0787	49	35,5433	33,7294	79	57,3046	54,3800
20	14,5075	13,7671	50	36,2687	34,4177	80	58,0299	55,0684
21	15,2329	14,4554	51	36,9941	35,1061	81	58,7553	55,7567
22	15,9582	15,1438	52	37,7195	35,7944	82	59,4807	56,4451
23	16,6836	15,8322	53	38,4448	36,4828	83	60,2061	57,1334
24	17,4090	16,5205	54	39,1702	37,1711	84	60,9314	57,8218
25	18,1344	17,2089	55	39,8956	37,8595	85	61,6568	58,5101
26	18,8597	17,8972	56	40,6210	38,5479	86	62,3822	59,1985
27	19,5851	18,5856	57	41,3463	39,2362	87	63,1076	59,8868
28	20,3105	19,2739	58	42,0717	39,9246	88	63,8329	60,5752
29	21,0359	19,9623	59	42,7971	40,6129	89	64,5583	61,2636
30	21,7612	20,6506	60	43,5225	41,3013	90	65,2837	61,9519
31	22,4866	21,3390	61	44,2478	41,9896	91	66,0091	62,6403
32	23,2120	22,0273	62	44,9732	42,6780	92	66,7344	63,3286
33	23,9374	22,7157	63	45,6986	43,3663	93	67,4598	64,0170
34	24,6627	23,4041	64	46,4240	44,0547	94	68,1852	64,7053
35	25,3881	24,0924	65	47,1493	44,7430	95	68,9106	65,3937
36	26,1135	24,7808	66	47,8747	45,4314	96	69,6359	66,0820
37	26,8389	25,4691	67	48,6001	46,1198	97	70,3613	66,7704
38	27,5642	26,1575	68	49,3255	46,8081	98	71,0867	67,4587
39	28,2896	26,8458	69	50,0508	47,4965	99	71,8121	68,1471
R	y	x	R	y	x	R	y	x

46° 30′

44°

R	*x*	*y*	*R*	*x*	*y*	*R*	*x*	*y*
10	7,1934	6,9466	40	28,7736	27,7863	70	50,3538	48,6261
11	7,9127	7,6412	41	29,4929	28,4810	71	51,0731	49,3207
12	8,6321	8,3359	42	30,2123	29,1757	72	51,7925	50,0154
13	9,3514	9,0306	43	30,9316	29,8703	73	52,5118	50,7101
14	10,0708	9,7252	44	31,6510	30,5650	74	53,2311	51,4047
15	10,7901	10,4199	45	32,3703	31,2596	75	53,9505	52,0994
16	11,5094	11,1145	46	33,0896	31,9543	76	54,6698	52,7940
17	12,2288	11,8092	47	33,8090	32,6489	77	55,3892	53,4887
18	12,9481	12,5039	48	34,5283	33,3436	78	56,1085	54,1834
19	13,6675	13,1985	49	35,2477	34,0383	79	56,8278	54,8780
20	14,3868	13,8932	50	35,9670	34,7329	80	57,5472	55,5727
21	15,1061	14,5878	51	36,6863	35,4276	81	58,2665	56,2673
22	15,8255	15,2825	52	37,4057	36,1222	82	58,9859	56,9620
23	16,5448	15,9771	53	38,1250	36,8169	83	59,7052	57,6566
24	17,2642	16,6718	54	38,8443	37,5116	84	60,4245	58,3513
25	17,9835	17,3665	55	39,5637	38,2062	85	61,1439	59,0460
26	18,7028	18,0611	56	40,2830	38,9009	86	61,8632	59,7406
27	19,4222	18,7558	57	41,0024	39,5955	87	62,5826	60,4353
28	20,1415	19,4504	58	41,7217	40,2902	88	63,3019	61,1299
29	20,8609	20,1451	59	42,4410	40,9848	89	64,0212	61,8246
30	21,5802	20,8398	60	43,1604	41,6795	90	64,7406	62,5193
31	22,2995	21,5344	61	43,8797	42,3742	91	65,4599	63,2139
32	23,0189	22,2291	62	44,5991	43,0688	92	66,1793	63,9086
33	23,7382	22,9237	63	45,3184	43,7635	93	66,8986	64,6032
34	24,4576	23,6184	64	46,0377	44,4581	94	67,6179	65,2979
35	25,1769	24,3130	65	46,7571	45,1528	95	68,3373	65,9925
36	25,8962	25,0077	66	47,4764	45,8475	96	69,0566	66,6872
37	26,6156	25,7024	67	48,1958	46,5421	97	69,7760	67,3819
38	27,3349	26,3970	68	48,9151	47,2368	98	70,4953	68,0765
39	28,0543	27,0917	69	49,6344	47,9314	99	71,2146	68,7712
R	*y*	*x*	*R*	*y*	*x*	*R*	*y*	*x*

46°

44° 30′

R	x	y	R	x	y	R	x	y
10	7,1325	7,0091	40	28,5300	28,0364	70	49,9275	49,0636
11	7,8458	7,7100	41	29,2433	28,7373	71	50,6408	49,7646
12	8,5590	8,4109	42	29,9565	29,4382	72	51,3540	50,4655
13	9,2723	9,1118	43	30,6698	30,1391	73	52,0673	51,1664
14	9,9855	9,8127	44	31,3830	30,8400	74	52,7805	51,8673
15	10,6988	10,5136	45	32,0963	31,5409	75	53,4938	52,5682
16	11,4120	11,2145	46	32,8095	32,2418	76	54,2070	53,2691
17	12,1253	11,9155	47	33,5228	32,9427	77	54,9203	53,9700
18	12,8385	12,6164	48	34,2360	33,6436	78	55,6335	54,6709
19	13,5518	13,3173	49	34,9493	34,3446	79	56,3468	55,3718
20	14,2650	14,0182	50	35,6625	35,0455	80	57,0600	56,0727
21	14,9783	14,7191	51	36,3758	35,7464	81	57,7733	56,7737
22	15,6915	15,4200	52	37,0890	36,4473	82	58,4865	57,4746
23	16,4048	16,1209	53	37,8023	37,1482	83	59,1998	58,1755
24	17,1180	16,8218	54	38,5155	37,8491	84	59,9130	58,8764
25	17,8313	17,5227	55	39,2288	38,5500	85	60,6263	59,5773
26	18,5445	18,2236	56	39,9420	39,2509	86	61,3395	60,2782
27	19,2578	18,9246	57	40,6553	39,9518	87	62,0528	60,9791
28	19,9710	19,6255	58	41,3685	40,6527	88	62,7660	61,6800
29	20,6843	20,3264	59	42,0818	41,3536	89	63,4793	62,3809
30	21,3975	21,0273	60	42,7950	42,0546	90	64,1925	63,0818
31	22,1108	21,7282	61	43,5083	42,7555	91	64,9058	63,7827
32	22,8240	22,4291	62	44,2215	43,4564	92	65,6190	64,4837
33	23,5373	23,1300	63	44,9348	44,1573	93	66,3323	65,1846
34	24,2505	23,8309	64	45,6480	44,8582	94	67,0455	65,8855
35	24,9638	24,5318	65	46,3613	45,5591	95	67,7588	66,5864
36	25,6770	25,2327	66	47,0745	46,2600	96	68,4720	67,2873
37	26,3903	25,9336	67	47,7878	46,9609	97	69,1853	67,9882
38	27,1035	26,6346	68	48,5010	47,6618	98	69,8985	68,6891
39	27,8168	27,3355	69	49,2143	48,3627	99	70,6118	69,3900
R	y	x	R	y	x	R	y	x

45° 30′

45°

R	x, y	R	x, y	R	x, y
10	7,0711	40	28,2843	70	49,4975
11	7,7782	41	28,9914	71	50,2046
12	8,4853	42	29,6985	72	50,9117
13	9,1924	43	30,4056	73	51,6188
14	9,8995	44	31,1127	74	52,3259
15	10,6066	45	31,8198	75	53,0330
16	11,3137	46	32,5269	76	53,7401
17	12,0208	47	33,2340	77	54,4472
18	12,7279	48	33,9411	78	55,1543
19	13,4350	49	34,6482	79	55,8614
20	14,1421	50	35,3553	80	56,5685
21	14,8492	51	36,0624	81	57,2756
22	15,5563	52	36,7696	82	57,9828
23	16,2635	53	37,4767	83	58,6899
24	16,9706	54	38,1838	84	59,3970
25	17,6777	55	38,8909	85	60,1041
26	18,3848	56	39,5980	86	60,8112
27	19,0919	57	40,3051	87	61,5183
28	19,7990	58	41,0122	88	62,2254
29	20,5061	59	41,7193	89	62,9325
30	21,2132	60	42,4264	90	63,6396
31	21,9203	61	43,1335	91	64,3467
32	22,6274	62	43,8406	92	65,0538
33	23,3345	63	44,5477	93	65,7609
34	24,0416	64	45,2548	94	66,4680
35	24,7487	65	45,9619	95	67,1751
36	25,4558	66	46,6690	96	67,8823
37	26,1630	67	47,3762	97	68,5894
38	26,8701	68	48,0833	98	69,2965
39	27,5772	69	48,7904	99	70,0036
R	y, x	R	y, x	R	y, x

45°

Николай Иванович Цвелодуб

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